



ANNUAL REPORT
OF THE
PUBLIC WORKS DEPARTMENT

FOR THE
YEAR ENDING DECEMBER 31, 1946.

BOSTON, January 2, 1947.

HON. JAMES M. CURLEY,
Mayor of Boston.

DEAR MR. MAYOR:

In compliance with the provisions of section 24 of chapter 3 of the Revised Ordinances of 1925, I respectfully submit the Annual Report of the Public Works Department for the year ending December 31, 1946.

The street program has been a very extensive one. Through funds which were provided by the present administration, ninety-five were constructed or reconstructed during the year, at a cost of approximately \$1,597,706. In addition, extensive patching operations were carried on in all sections of the city, at a cost of \$196,610, making our total expenses for the year, \$1,794,316.

For many years while the Sanitary Division of the Public Works Department has carried on the bulk of the street-cleaning work throughout the city, there were certain sections where the street cleaning was done by the forces of the Highway Division. We are reorganizing this work so that, eventually, all street-cleaning activities will be carried on by the Sanitary Division. The first district affected by this new system is Jamaica Plain, where recently a new street-cleaning service was established.

Our street program has been a very creditable one, and the structural condition and cleanliness of our streets are apparent, even to the casual observer. One particular street worthy of mention at this time is Columbus avenue, from Northampton street to Roxbury Crossing, where the sidewalks were narrowed and the roadway widened, including the installation of traffic separation islands. Columbus avenue is a direct route to intown Boston, and the improvement which we have made thus far on this street, and which is to be continued as soon as conditions permit, will, I feel, help in a large measure in restoring this particular street, as the new construction, together with the improved lighting facilities which have been installed, will serve as an incentive to property owners to improve their premises.

A problem which affected the City for many years was the presence of the so-called looper traps in the roadway of Bunker Hill street, Charlestown. Much agitation has been carried on for a long time for the removal of these traps, and finally, with the approval of your Honor, steps were taken to bring about their elimination. This was accomplished; the traps were removed and the roadway was opened to complete use just prior to the 17th of last June.

Besides the two improvements which I have mentioned, this department has completed street construction jobs on the American Legion Highway, in Dorchester, from Blue Hill avenue to Walk Hill street; on Medford street, Charlestown, from Chelsea street to Main street; Day square and Bennington street, East Boston, from Prescott street approximately to the railroad bridge; Bremen street, East Boston, from Porter street to Bennington street; and Metropolitan avenue, West Roxbury, from Kittredge street to Poplar street. We are now negotiating with the Department of Public Works of the Commonwealth, with a view to obtaining the cooperation of the State in the matter of reconstructing, under chapter 90 of the General Laws, Beacon street in Brighton, from Cleveland Circle to the Newton line, and Gallivan Boulevard, in Dorchester, from the traffic circle at Neponset Bridge to Granite avenue. Our negotiations are progressing satisfactorily, and with the joint cooperation of the State and the City, we hope to be able to rebuild both of these streets during the coming construction season.

On October 1 of the present year, the City became the owner of all of the equipment used for street lighting. This equipment, with the exception of the posts which always were the property of the City, was purchased by agreement with the owners. A contract was awarded for lighting, extinguishing, and servicing the lamps on very satisfactory terms, and there is no question but, from a financial standpoint, the City will save money by carrying on gas lighting under the present arrangement.

We have taken advantage of the sales of property and equipment which became surplus, as far as the Federal Government is concerned. Tires and equipment of various types have been purchased at considerable saving to the City, and I am sure that the results we have obtained have justified the action taken. In spite of the fact that motor vehicle equipment has not been available for some time, the department has continued to operate with the equipment it already possessed by inheritance from previous administrations. I feel that the equipment of this department is in a better condition than it has been for years, due to the fact that most of it has been thoroughly overhauled at a reasonable expense, and it is now ready for service in connection with our snow-removal activities.

The Public Works Department during the year has cooperated very extensively with the Boston Housing Authority, the State Housing Authority, and the Federal Public Housing Authority, in the matter of the construction and erection of temporary housing for veterans. It was possible to carry on this particular work because of the interest shown by your Honor in securing funds for the purpose. Under our direction water pipes were laid, sewerage facilities installed, and roadways constructed at Franklin Field and at the Alsen Playground in Dorchester.

Many of our bridges are in need of extensive repairs; in fact, some of them should be completely rebuilt. All of these bridges carry very heavy traffic, and in order to keep them in operation, we have had to spend considerable money this year on a number of them. A very large job had to be done on the Charlestown Bridge over the Charles River, because of an accident which occurred on the 17th of last December when a boat backing out from one of the docks, ran into the

bridge, throwing it entirely out of commission, as well as interrupting the service of the Elevated structure. We proceeded immediately to make repairs, which cost nearly \$100,000. The matter of reimbursing the City for the expense to which it had to go for this work is now being handled by the Law Department, in court.

The business of the Sumner Tunnel continues to gain. For the eleven months ending November 30 the vehicle count and the revenue from toll rates exceeded those of the entire year of 1945. From present indications, it is evident that the business of the tunnel this year will be the largest that it has been since the tunnel was opened on the 30th day of June, 1934. Due to a new system which was inaugurated some time ago in the Sumner Tunnel, traffic now flows through this facility more smoothly. Through an arrangement made with the street railway companies which operate busses in the tunnel, their vehicles are now permitted to go through without payment of the customary toll, and an accounting is made for the vehicles of these companies which go through the tunnel. Payment is then made on a monthly basis. In that way no stoppages occur because of the necessity of the operators of busses having to present tickets as they enter the tunnel at either end. This is an accomplishment which I feel has helped very much in the operation of the tunnel. We are now making arrangements to award contracts for some necessary repairs to the Administration Building and also to the ventilation buildings connected with the tunnel.

Through the efforts of this department in collecting outstanding bills, which received the wholehearted approval and encouragement of your Honor, water revenue increased to such an extent that it was possible to make a reduction in the rates to consumers. The officials and employees of this department in the Water Division deserve credit for the manner in which they have handled the affairs of the Division and the record which has been made is worthy of commendation. On July 1, with the approval of your Honor and also with the approval of the Metropolitan District Commission, a 20 per cent reduction was made in the rates for water furnished to consumers. It is very gratifying to know that it was possible for this department to take such a step.

At the request of this department, your Honor asked the City Council to provide a loan of \$200,000 for the erection of an incinerator in the Brighton district. The

necessary authorization has been received and this department is about ready to proceed with making arrangements for awarding a contract. This, in my opinion, is one means of solving the problem of garbage and rubbish disposal with which the department has had to contend for many years, and I am sure that the erection of this plant will be of invaluable benefit to the City.

For many years the City has received complaints that the waters of Boston Harbor were being polluted by sewage discharged from its basins located at Moon Island. Considerable thought has been given to the matter, and it was finally decided that a sewage treatment plant should be constructed. The necessary contract for the preparation of plans was awarded some time ago, the preliminary design has been completed, and work is now in progress on the final design. The estimated cost of this plant is \$4,000,000, and we are hopeful of obtaining, through the assistance of your Honor, federal funds to help defray the cost of the construction of this plant. It will be modern and up-to-date in every detail, and when completed will be of considerable benefit to the City of Boston in disposing of its sewage.

The Dorchester and Hyde Park areas are the recipients of projects for sewer construction which will be of benefit for the betterment of both districts. A contract has been awarded at an estimated cost of \$200,000 for covering in and extending another section of Stony Brook, and in Dorchester, Tenean Creek is being built in a covered conduit for a length of about 1,000 feet from its present terminus at the New York, New Haven and Hartford Railroad, to Freeport street. The estimated cost of this work is \$294,000.

I am pleased to inform your Honor that through economies made in this department, it was possible during the year to furnish funds to other departments which ran short in their appropriations, and this was done without any curtailment in the activities of the Public Works Department. Reports from the Division Engineers covering the operations of their divisions for the year are attached.

Respectfully submitted,

ROBERT P. CURLEY,
Commissioner of Public Works.

The records of the department show that there are now 2,425 persons eligible for employment in the several divisions, and of that number 2,380 were upon the January, 1947, pay rolls.

Grade and Number of Employees.

TITLE.	SERVICES.								
	Central Office.	Paving and Lighting.	Sewer.	Sanitary.	Street Cleaning.	Bridge.	Ferry.	Tunnel.	Water.
Commissioner.....	1								
Division engineers.....		1	1	1		1			1
Assistant engineers (civil).....		18	32			13			5
Draftsmen.....									1
Instrumentmen.....		13	12						
Rodmen.....		3							
Blueprinters.....			5						
Superintendents.....		2							1
Supervisors.....		1		1	1	1			
General foremen.....		1	1						
Foremen.....		11	8	17	13	1		1	7
Chief inspectors.....		1	2						1
Inspectors-subforemen.....	1	61	21	48	24	2		2	16
Executive secretaries.....	1								1
Chief clerks.....		1	1						2
Executive clerks.....		1	1			1			1
Clerks-stenographers.....	9	25	11	7	1	3	1	8	53
Telephone operators.....		1							1
Cashiers and assistants.....							1	2	1
Storekeepers.....							1		1
Patternmaker.....									1
Medical inspector.....					1				
Chemist and assistant.....		1							
Cement tester and assistant.....			1						
Captains.....							4		
Quartermaster-pilots.....							2		
Deckhands.....							11		
Dispatcher.....		1							
Investigators.....		1	1						1
<i>Carried forward.....</i>	12	143	97	74	40	22	20	13	94

Grade and Number of Employees.—Concluded.

TITLE.	SERVICES.									
	Central Office.	Paving and Lighting.	Sewer.	Sanitary.	Street Cleaning.	Bridge.	Ferry.	Tunnel.	Water.	Total.
<i>Brought forward</i>	12	143	97	74	40	22	20	13	94	515
Matrons.....							2			2
Engineers (steam).....		9	3				4			16
Oilers.....			7				5			12
Firemen.....		1	4				11			16
Gatemen-Tollmen-guards.....			5				9	34		48
Sergeant-Tollmen-guards.....								4		4
Gatemen-filth hoisters.....			5							5
Meter readers.....									35	35
Drawtenders and assistants.....						136				136
Chief and electricians.....			2					13		15
Master mechanics.....		3		3	1		2		3	12
Auto mechanic-repairers.....		28	3	1						32
Blacksmiths-horseshoers.....		6	1	12					1	20
Carpenters-joiners.....		5	4	2		12	2			25
Harnessmaker and assistant.....				1						1
Machinists.....			3			2	3	3	7	18
Painters.....		9		6		1	1			17
Pavers.....		21				1				22
Plumbers-pipefitters.....							1		132	133
Boilermakers.....			1				1			2
Rigger-roofer.....							1			1
Sewer cleaners-flushers.....			24							24
Catch-basin cleaning machine op- erators.....			7							7
Stonecutters-brick masons.....		4	3	1						8
Wheelwrights and assistants.....				4						4
Head chauffeurs.....		5								5
Chauffeurs, etc.....		65	25	56	104	5		13	34	302
Working foremen, laborers, etc.....		5	2		2	3			1	13
Laborers, teamsters, etc.....		196	39	199	380	7	6	8	90	925
Wharfinger.....				1						1
Yardmen and yardmasters.....		6	4	2	2	1			3	18
Constables.....					22				9	31
Totals.....	12	506	239	362	551	190	68	88	409	2,425

**Number of Employees Actually Employed January 1, 1946, and
January 1, 1947.**

	Tunnel.	Central Office.	Bridge.	Ferry.	Water.	Paving and Lighting.	Sanitary.	Street Cleaning.	Sewer.	Total.
January 1, 1946.....	82	12	190	71	386	482	362	465	235	2,285
January 1, 1947.....	82	12	182	65	401	499	361	549	229	2,380

Total Eligible Force.

January 1, 1946.....	88	12	198	72	389	496	367	472	244	2,338
January 1, 1947.....	88	12	190	68	409	506	362	551	239	2,425

**Appointments, Transfers, Resignations, Retirements, Deaths, Etc., of
Employees.**

Died.	Retired.	Transferred to Other Depart- ments.	Transferred to Other Services.	Discharged.	Resigned.	January 8, 1946.	SERVICES. 1945-1946.	January 1, 1947.	Transferred from Other Services.	Transferred from Other Depart- ments.	Reinstated.	Appointed.
....	....	....	1	....	....	12	Central Office.....	12	....	1	....	....
....	4	7	....	....	1	198	Bridge.....	190	....	1	....	3
1	5	....	....	....	2	72	Ferry.....	68	1	1	1	1
5	11	4	1	7	10	496	Paving and Lighting.....	506	6	2	3	37
8	15	1	25	3	9	367	Sanitary.....	362	9	....	2	45
5	11	2	14	48	11	472	Street Cleaning.....	551	24	1	3	142
2	4	....	....	....	2	244	Sewer.....	239	1	....	2	....
5	15	1	2	11	11	389	Water.....	409	2	1	2	60
....	1	....	....	1	....	88	Tunnel.....	88	....	....	....	2
26	66	15	43	70	46	2,338	Totals.....	2,425	43	7	13	290

MAINTENANCE APPROPRIATIONS AND EXPENDITURES.

DIVISION OR SERVICE.	Total Appropriations, Including Transfers.	Expenditures.	Unexpended Balance.
Central Office	\$38,886 78	\$36,945 91	\$1,940 87
Bridge Service	489,867 18	472,078 43	17,788 75
Ferry Service	249,058 41	240,137 12	8,921 29
Tunnel Service	363,378 19	342,309 05	21,069 14
Lighting Service	977,895 11	975,012 23	2,882 88
Paving Service	1,054,147 56	1,013,933 24	40,214 32
Sanitary Division	3,674,015 07	3,589,748 10	84,266 97
Sewer Division	525,129 86	515,283 24	9,846 62
Water Division	1,590,623 32	1,413,166 95	177,456 37
Totals	\$8,963,001 48	\$8,598,614 27	\$364,387 21

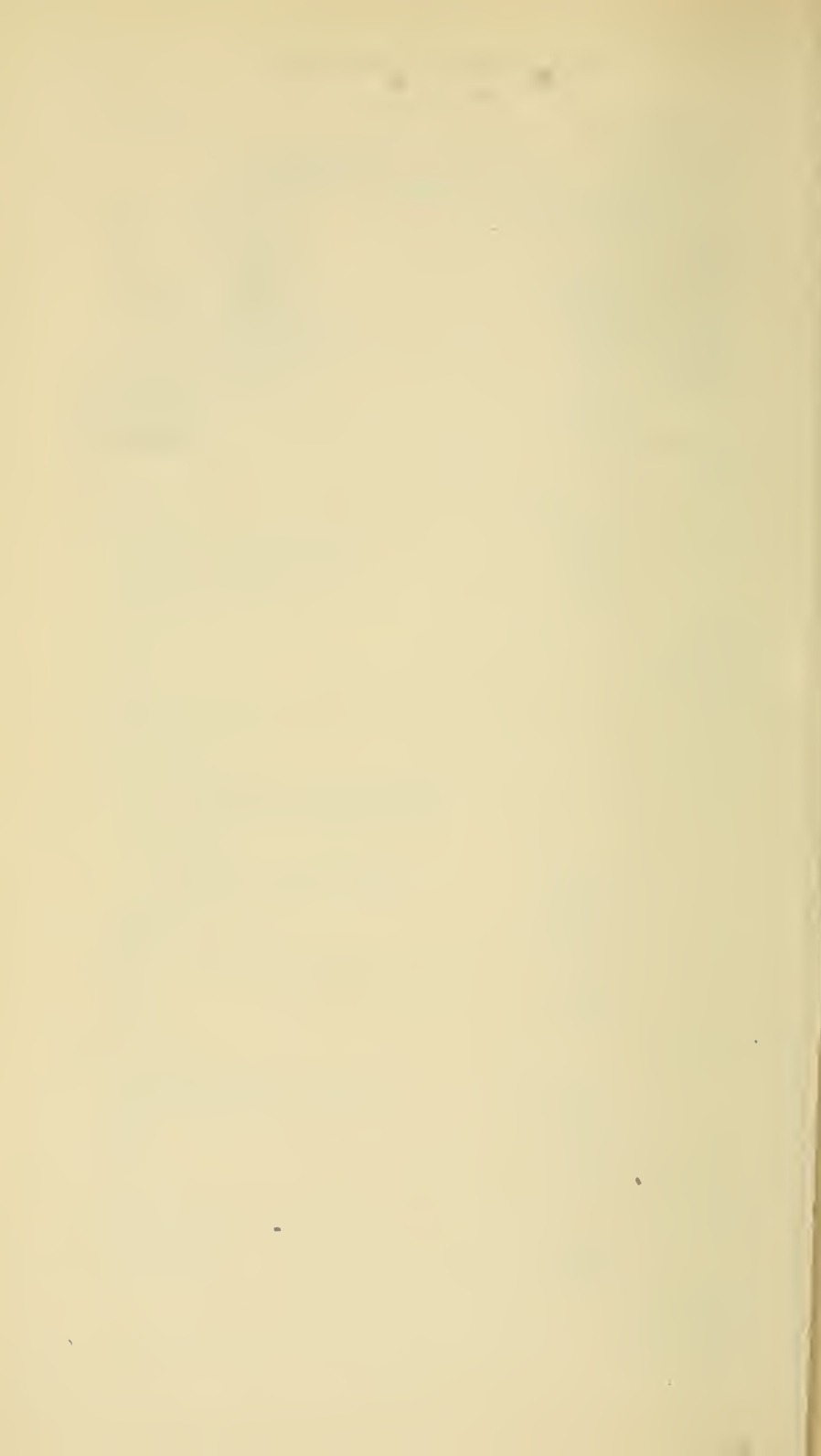
EXPENDITURES FROM SPECIAL APPROPRIATIONS, ETC.

Bridges, Construction of (revenue)	\$67,687 72
Bridges, Construction of (non-revenue)	55,114 83
Bridges, Repairs, etc. (revenue)	227,409 75
Ferry Improvements (revenue)	10,997 25
Reconstruction of Streets (revenue)	211,805 80
Sidewalks, Construction and Reconstruction of (revenue),	55,536 00
Sewerage Works (revenue)	119,519 70
Sewerage Works (non-revenue)	304,365 44
Public Ways, Construction of (revenue)	158,351 46
Public Ways, Construction of (non-revenue)	1,403,297 01
Snow Removal (revenue)	280,302 72
	<u>\$2,894,387 68</u>

REVENUE.

On Account of Public Works Department.

Central Office:		
Sale of plans, etc.		\$1,062 00
Bridge Service:		
Charlestown Bridge	\$32 90	
Dorchester Avenue Bridge	23 92	
Northern Avenue Bridge	42 19	
Chelsea South Bridge	709 11	
Summer Street Bridge	49 91	
Clerical Service	14 15	
Rents	2,600 00	
Caretaker	46 46	
Junk	37 50	
		<hr/>
		3,556 14
Ferry Service:		
Tolls	\$12,599 27	
Rents	125 00	
Cleaning telephone booths	22 00	
Commission on telephones	18 49	
Weighing machine	25 00	
Junk	8 88	
		<hr/>
		12,798 64
Summer Tunnel:		
Tolls		1,709,491 00
Lighting Service:		
Damage to posts		397 18
Paving Service:		
From assessments on abutters for cost of laying sidewalks in front of their premises, including material for same:		
Assessments added to taxes	\$3,771 19	
Assessments paid in advance	112 83	
Unapportioned	1,647 43	
Permits	34,449 06	
Sale of materials, etc.	238 06	
Labor and materials furnished	131 65	
Junk	357 61	
Rent	454 50	
Damage	42 69	
		<hr/>
		41,205 02
Sewer Service:		
Disposal of sewage	\$19,450 00	
Labor and materials furnished	130 00	
Entrance fees	3,727 04	
Junk	143 92	
Rent	50 00	
Refunds	40 00	
		<hr/>
		23,540 96
Sanitary Service:		
Collection of commercial waste	\$13,268 21	
Sale of junk	110 81	
Use of trucks	35 00	
		<hr/>
		13,414 02
Carried forward		<hr/>
		\$1,805,464 96



PART II.
APPENDICES.

APPENDIX A.

REPORT OF THE DIVISION ENGINEER OF
THE BRIDGE AND FERRY DIVISION.

BOSTON, January 2, 1947.

To the Commissioner of Public Works.

DEAR SIR,—I respectfully submit the following report of the income, expenditures and operation of the Bridge and Ferry Division for the year ending December 31, 1946. The appropriations and expenditures of the division were as follows:

Bridge Service.

Regular appropriation, 1946	\$518,453 62
Transfers from	28,586 44
	<hr/>
Expenditures, 1946	\$489,867 18
	472,078 43
	<hr/>
Unexpended balance, December 31, 1946 . .	<u>\$17,788 75</u>

Bridges, Repairs, Etc.

Balance from 1945	\$78,675 53
1946 appropriation	200,000 00
	<hr/>
Expenditures, 1946	\$278,675 53
	227,409 75
	<hr/>
Unexpended balance, December 31, 1946 . .	<u>\$51,265 78</u>

Bridges, Construction of.

Balance from 1945	\$2,556,393 50
Expenditures, 1946	122,802 55
	<hr/>
Unexpended balance, December 31, 1946 . .	<u>\$2,433,590 95</u>

*Departmental Equipment Non-Revenue, Bridge Service Marine
Equipment.*

1946 appropriation	\$9,500 00
Expenditures, 1946	660 75
	<hr/>
Unexpended balance, December 31, 1946 . .	<u>\$8,839 25</u>

Ferry Service.

1946 appropriation	\$249,058 41
Expenditures, 1946	240,137 12
	<hr/>
Balance, December 31, 1946	<u>\$8,921 29</u>

Ferry Improvements, Etc.

Balance from 1945	\$2,719 34
1946 appropriation	65,000 00
	<hr/>
Total amount available	\$67,719 34
Expenditures, 1946	10,997 25
	<hr/>
Unexpended balance, December 31, 1946	<u>\$56,722 09</u>

Sumner Traffic Tunnel.

1946 appropriation	\$363,378 19
Expenditures, 1946	342,309 05
	<hr/>
Balance, December 31, 1946	<u>\$21,069 14</u>

The foregoing does not include certain expenditures for construction work for other divisions and departments, which work was supervised by the engineers of this division.

Under orders of the Department of Public Utilities, Commonwealth of Massachusetts, schedules of tolls and charges for the use of the Sumner Traffic Tunnel, between Boston Proper and East Boston, were approved, covering the year 1946.

The city has been operating only one ferry, the so-called "South Ferry," since early in 1933, with the Boston terminus at Eastern avenue and the East Boston terminus at Lewis street.

The more important works undertaken during the past year in the Bridge & Ferry Division, were emergency construction work on the Charlestown Bridge; repairs to fender piers, Charlestown Bridge; redecking Central Avenue Bridge; repairing Glenwood Avenue Footbridge; emergency construction work on Warren Bridge; repairs to fender piers at Warren Bridge; repairs to roadway of Warren Bridge; resurfacing West Fourth Street Bridge; resurfacing the Boylston Street and Milton Street Bridges; repairing the Dartmouth Street, Clarendon Street and Arlington Street Bridges;

repairing Braddock Park and West Rutland Street Footbridges; repairing hull, etc., of ferryboat "Daniel A. MacCormack"; repairing South Ferry fenders; repairs to control wiring and control cables, Sumner Tunnel; repairing pavement, Sumner Traffic Tunnel; painting, etc., Tunnel and Administration Building, Sumner Traffic Tunnel; repairs to Albany Street Disposal Station, etc.

BRIDGE SERVICE.

Central Avenue Bridge — Redecking.

A contract was awarded to John F. Shea Company, for cleaning and painting the steel work, renewing all stringers except a few which were acceptable for reuse, replanking and substituting a bituminous concrete wearing surface for the old 2-inch spruce sheathing. The old stringers spacing of 3 foot 0 inch on center was changed by spacing the new stringers at 2 foot 0 inch on centers and the old 4-inch square-edge Y. P. plank was replaced with new 5-inch T. & G. Y. P.

Work commenced on October 23, 1946, and was completed December 11, 1946, at a cost of \$13,349.35.

Emergency Construction Work on the Charlestown Bridge, over the Charles River.

Work which had commenced on December 17, 1945, consisting of clearing away the old steel work and plank deck was completed by January 16, 1946.

This work was done by the McKie Lighter Company, a subcontractor for the Coleman Brothers Corporation.

The new steel work was fabricated by the Groisser and Shlager Iron Works of Somerville, Mass., transported to the site by the McKie Lighter Company and erected by Coleman Brothers Corporation.

Work was completed April 13, 1946, at a cost of \$99,125.06.

Charlestown Bridge — Repairs to Fenders.

A contract was awarded to William H. Ellis & Son Company for repairing the fender piers of the Charlestown Bridge at an estimated cost of \$14,420.

Work was commenced October 23, 1946, and will be completed next year. A payment of \$4,238.95 has been made this year.

Glenwood Avenue Bridge — Repairs.

A contract was awarded to J. A. Singarella Company for repairing steel work, painting and redecking the Glenwood Avenue footbridge, over the Neponset river and the formerly-owned railroad bridge over the New York, New Haven & Hartford Railroad on July 15, 1946.

Work commenced July 22, 1946, and was completed on November 1, 1946, at a cost of \$11,820.79.

Warren Bridge — Emergency Contracts Nos. 1 and 2.

A contract was awarded to Marinucci Brothers & Co. for repairs to the stringers, planking, and pavement of the roadway of the Warren Bridge approaches on January 5, 1946.

Work was commenced January 2, 1946, and was completed on February 19, 1946, at a cost of \$7,347.58.

Due to the great extent of repairs necessary a further contract was awarded to Marinucci Brothers & Co., on March 7, 1946.

Work commenced March 4, 1946, and was completed on March 30, 1946, at a cost of \$7,411.64.

Warren Bridge Repairs to Fender Pier.

A contract was awarded to James B. Rendle Company for repairing the upstream end of Boston fender pier of the Warren Bridge on March 25, 1946.

Work commenced April 8, 1946, and was completed on June 6, 1946, at a cost of \$15,607.25.

Repairs to Warren Bridge.

A contract was awarded to Fred J. Wallace for repairing the upstream sidewalk and for patch repairing the roadway on the Boston approach of the Warren Bridge on June 6, 1946.

Work was commenced June 24, 1946, and was completed October 17, 1946, at a cost of \$26,111.55.

In conjunction with this contract separate repair work was done for the Water Division on its pipe supports under our upstream sidewalk at a cost of \$7,872.40.

Repairs to the Roadway of the Warren Bridge.

A contract was awarded to the M & R Construction Company, for further repairs to the roadway of Warren Bridge on November 14, 1946.

Work was commenced November 25, 1946, and is expected to be completed the beginning of next year.

No payments were made on this contract in 1946.

Resurfacing the West Fourth Street Bridge.

A contract was awarded to Martin J. Kelley, Inc., for removing the spruce wearing surface, refastening the under deck and placing a new bituminous concrete wearing surface on both roadways of the West Fourth Street Bridge on August 8, 1946.

Work commenced August 9, 1946, and was completed November 7, 1946, at a cost of \$4,941.06.

Construction Work on the Summer Street Bridge, over Fort Point Channel.

After completing work on the upstream draw span and approaches on November 28, 1945, the Contractor V. Grande requested and received an extension of time of six months on account of impossibility of obtaining the necessary lumber to repair the down stream draw span.

When the necessary lumber was made available, the Contractor resumed work and completed the work on June 20, 1946, at a cost of \$60,726.13.

Construction Work on the Summer Street Bridge, over the Reserved Channel.

A contract with Marinucci Brothers & Co., for construction work on the Summer Street Bridge, over the Reserved Channel, was completed September 29, 1943.

On account of a claim filed by the contractor against the city, the amount of \$3,790.79 was withheld.

On January 9, 1946, this claim was settled in court and final payment was made to the contractor. The total cost of the work was \$158,605.36, plus the court settlement of \$3,500.

Repairing the Dartmouth Street, Clarendon Street, and Arlington Street Bridges.

A contract was awarded on May 16, 1946, to A. Orlando, Inc., for removing loose and disintegrated concrete and repairing with gunite, where directed, at the

three bridges, placing new bituminous concrete wearing surface over the granite block at Dartmouth Street and Clarendon Street Bridges and painting all three bridges.

Work commenced May 27, 1946, and was completed August 27, 1946, at a cost of \$18,298.90.

Repairing Braddock Park and West Rutland Square Footbridges.

A contract was awarded to the Carney Construction Company for steel repairs, painting and redecking the Braddock Park and West Rutland Square Footbridges, on May 31, 1946.

Work commenced June 26, 1946, and was completed October 14, 1946, at a cost of \$9,924.79.

Resurfacing the Boylston Street Bridge and the Milton Street Bridge.

A contract was awarded to Baker & Co. for resurfacing the Boylston Street and Milton Street Bridges, on April 24, 1946, with bituminous concrete wearing surface.

Work commenced June 3, 1946, and was completed June 29, 1946, at a cost of \$7,976.93.

Construction Work on Boston Street, Dorchester Avenue, and Southampton Street Bridges.

The work of redecking and resurfacing these bridges was commenced on August 27, 1945, and continued through the winter, and was completed on March 16, 1946, at a cost of \$17,398.78.

The New York, New Haven and Hartford Railroad made extensive steel repairs while this work was in progress.

Snow Removal.

A contract was awarded to Walter Reed Corporation on February 13, 1946, for removing snow in the Snow Area No. 2. Work was completed February 22, 1946, at a cost of \$5,942.31.

A contract was awarded to Baker & Co. on February 13, 1946, for snow removal in the Snow Area No. 3. Work was completed February 22, 1946, at a cost of \$5,099.21.

This work was done under the supervision of this Division.

SANITARY DIVISION.

Repairs to the Albany Street Disposal Station.

A contract was awarded to Fred J. Wallace for general repairs, such as driving new piles, repairing caps, stringers, planking and posting old piles of the Albany Street Disposal Station, on September 25, 1946.

Work was commenced October 7, 1946, and is expected to be completed in the spring of 1947. No payments were made on this contract during 1946.

This work was for the Sanitary Division but engineered and supervised by this Division.

Maintenance Force.

The Maintenance Force patched and replaced deck sheathing, headers and sidewalk planking on various bridges; repaired platforms, refastened treads, cleaned and painted drawhouses; made repairs to drawhouses and controller houses; added to and deducted from counterweights; repaired steps; removed snow and ice from bridges and sanded same; repaired piers; painted fences and gates; did general carpenter work and painting and made mechanical repairs, etc., repaired wood block paving; refastened treads on various bridges; repaired and rebuilt gates on various bridges; repaired floats; built and repaired sandboxes; rebuilt coal bins at various bridges; repaired boats; set glass at various drawhouses; made miscellaneous small repairs at various bridges, etc.

The maintenance force cleaned the bridge sidewalks and steps in the intown area of snow and other refuse during the year. Electrical and machinery maintenance was taken care of by the electrician and machinists.

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Another duty of the division during the winter months was the supervising and inspecting of snow loading and removal, in common with other divisions of the department. This work was done under contract.

In the course of the year part of the activities of the office force was taken up in work for other divisions of the department. While these efforts, spread over the entire period, did not require a considerable amount of time, the nature of the work was of an advisory and investigating nature.

FERRY SERVICE.

The following ferryboats are in commission:

NAME.	When Built.	Length.	Gross Tons.
Charles C. Donoghue.....	1926	174 feet, 4 inches	756.77
Daniel A. MacCormack.....	1926	174 " 4 "	756.77
Ralph J. Palumbo.....	1930	174 " 4 "	779

All these boats are of the propeller type and all are steel boats.

The work of this service for the year consisted of the following:—

FERRIES.

Ferry Boat "Daniel A. MacCormack."

Early in this year data was collected for the annual repairs to the hull and machinery of the "Daniel A. MacCormack" so that the boat would again have the Federal Certificate to operate as soon as the papers of the "Ralph J. Palumbo," then on the route, would expire.

On April 17, when the bids were publicly opened and read, there was but one proposal to consider, that of the Bethlehem Shipbuilding Corporation. This bid was accepted and on May 22 a contract was entered into with the Bethlehem Shipbuilding Corporation, in the sum of \$26,234. Work on the contract started on May 23, when the vessel was taken to the Atlantic Works.

As the work progressed, it was soon noted that all of the necessary repairs to again place the boat in service were not covered in the terms of the contract which had been entered into; this condition became apparent as the various phases were uncovered as the terms of the contract were being fulfilled. While under the contract all repairs deemed necessary had been covered on the hull and machinery, it was later found that further repairs to the main engines, auxiliaries and hull would be required to again put the boat in service and maintain it on the route for at least one year, all as required by the United States Coast Guard, Inspection Service. To cover additional work, when the necessity appeared, an extra work order, dated June 27, was written in the sum of \$2,332.

While every effort was made to complete the contract in due time, there were apparently some needless delays which required the City, in order to maintain the ferry service, to apply for an extension of the "papers" of the "Ralph J. Palumbo" for a period of one week, otherwise the service would be stopped until the "Daniel A. MacCormack" was again in proper condition to again go on the route. Under the circumstances, the extension was granted and on July 30, as soon as the work was completed, the vessel began operating on the route.

All work under the contract, including the additional work as noted, was completed at a cost of \$31,682.69.

Repairs to South Ferry Fenders.

A contract was awarded to Roy B. Rendle & Co., Inc., for repairing the fenders of the South Ferry on October 8, 1946.

Work commenced on October 22, 1946, and is expected to be completed early next year.

Payments of \$10,975.25 have been made this year.

Removing Ashes, etc., from the Ferryboats.

A contract was awarded to Harry Benson for removal of ashes from the ferryboats on December 31, 1945.

Work commenced January 1, 1946, and was completed December 31, 1946, at a cost of \$3,070.

Department Force.

During the year machinists, carpenters, painters, riggers and other mechanics, who are included in the personnel of the Ferry Service, made all repairs possible to the plant to the extent of equipment at their disposal. This work consisted mainly of minor repairs to the machinery on the boats, repairs to ferry bridge machinery, ferry bridge roadways and headhouse repairs in general.

SUMNER TRAFFIC TUNNEL.

Repairs to Control Wiring and Control Cables at the Sumner Tunnel.

A contract was awarded to the Massachusetts Electric Construction Co., Inc., for removing and reconnecting the cable connections in the Boston and East Boston Distribution Cabinets and renewing other cables in the Sumner Tunnel on April 22, 1946.

Work commenced April 22, 1946, and after the Boston Distribution Cabinet had been removed the City found it was impossible to get delivery on new cable to complete the work, so that the contract was terminated on March 21, 1946, at a cost of \$700.

Painting, etc., at the Sumner Tunnel and Administration Building.

A contract was awarded to John D. Ahern for painting the exterior and interior of the Administration Building, building a glass and wood partition in the office, and painting the Toll Booths and metal fences, on December 31, 1946.

No work was done and no payments made on this contract during 1946.

Repairing Pavement — Sumner Tunnel.

A contract was awarded to the Construction Units for patch repairing the pavement of the Sumner Tunnel by removing the depressed areas of granite block and sand cushion, and repaving, using a mastic base in place of sand, on October 7, 1946.

Work was commenced on November 5, 1946, and was completed December 24, 1946, at a cost of \$8,804.95.

Reparing Sumner Tunnel.

A contract was awarded to the Rufo Construction Company for repaving parts of the roadway of the Sumner Tunnel on December 29, 1945.

Work commenced on January 4, 1946, and was completed February 9, 1946, at a cost of \$6,644.50.

Summary of Work During 1946.

1. *Personnel.*

During the year of 1946, the following changes were made in the personnel of the Tunnel:

- 1 Tollman-Guard, appointed.
- 1 Tollman-Guard, pensioned.
- 1 Clerk, appointed.
- 2 Tollmen-Guards, leave of absence.

2. *Vehicular Traffic.*

	1942.	1943.	1944.	1945.	1946.
Total.	6,770,855	5,715,999	6,449,934	7,223,762	8,432,721
Monthly Average....	564,228	476,000	536,500	601,980	702,727
Weekly Average.....	130,209	110,000	124,000	138,918	162,168
Daily Average.....	18,055	15,650	17,600	19,791	23,103

3. *Garage Service.*

	1942.	1943.	1944.	1945.	1946.
Tow Jobs.....	160	104	185	291	327

4. *Booth Red Signal.*

	1942.	1943.	1944.	1945.	1946.
Booth, Red On.....	6	8	5	7	5
Total Duration.....	79 min.	255 min.	56 min.	155 min.	57 min.

5. *Power.*

The power supply is received from the Boston Edison Company at 13,800 volts and is transformed to other voltages to operate the fans, pumps, heat and lighting.

	1942.	1943.	1944.	1945.	1946.
Total kilowatts.....	2,912,544	2,813,427	3,104,100	4,097,653	5,809,371
Number of vehicles..	6,770,855	5,715,999	6,449,934	7,223,762	8,432,721

6. *Fires.*

There were three fires in the Tunnel during the past year, all minor; total duration of seventeen minutes.

7. *Tunnel, General.*

All catch-basins have been cleaned, once in March and once in September.

On two occasions, emergency repairs were made on the Tunnel roadway. All work was performed after midnight, with no interference to vehicular traffic.

8. *Motors, Fans, Dampers.*

The twenty-eight motors, fans and dampers have been cleaned, adjusted and tested for the most efficient operation. All motor controllers have been cleaned and all contacts and coils inspected and adjusted.

9. *Circuit Breakers, Air Type and Oil Type.*

All circuit breakers have been tested and adjusted to insure proper operation.

10. *Transformers and Relays.*

Oil in transformers has been tested and changed as needed. All relays were tested, adjusted and properly set.

11. *Toll Registering Equipment.*

Insulation and pressure tests have been made on all treadles and wiring. All key boxes have been overhauled and repaired as needed. The toll registers are all in good working conditions and are operating properly.

12. *Carbon Monoxide Equipment.*

All chemicals have been changed and renewed as per operation schedule. The four carbon monoxide analyzers have been adjusted and calibrated as needed.

13. *Pumps.*

The harbor and portal pumps were painted and overhauled and are all in working condition; foot valves and piping renewed as required.

14. *Telephone System.*

The relays have been cleaned and adjusted. Defective cords and handsets were replaced as needed.

15. *Storage Batteries.*

During the past year, a new storage battery has been installed in the East Boston Vent Building. All batteries have been charged and cleaned at regular intervals.

16. *Traffic Signals.*

All traffic signal relays and relay panels were cleaned and overhauled as needed. Broken glass in signals were replaced.

17. *Motor Generators.*

The four motor generators are in good working condition, commutators have been undercut, new brushes installed as needed. All machines have been cleaned and painted.

Yours respectfully,

JOHN DEMEULENAER,
Division Engineer.

BRIDGE SERVICE.

FINANCIAL STATEMENT FOR 1946.

Expenditures from Maintenance Appropriations.

Boston Bridges	\$472,078 43
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Total Expenditures.

From Maintenance Appropriation	\$472,078 43
From Special Appropriations	350,873 05

	<u>\$822,951 48</u>
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Expenditures on Boston Bridges.

Administration:

Salaries:

Division Engineer	\$3,000 08
Engineers, inspectors }	39,578 17
Draughtsmen, clerks }	
Supervisor	2,926 67
Foreman	2,800 07
Veterans' pensions	5,527 92
Injured employees	149 20

	<u>\$53,982 11</u>
--	--------------------

Printing, postage, stationery	\$1,146 78
Travelling expenses	26 20
Engineers' supplies	29 00
Engineers' instruments, new and re-	
paired	16 19
Binding	32 50
Supplies and miscellaneous	107 20

	<u>1,389 37</u>
--	-----------------

	<u>\$55,371 48</u>
--	--------------------

Yard and stockroom:

Yard:

Clerks, yardman and watchmen	\$11,451 50
Holiday, vacations, sick leave	4,383 88
Travelling expenses	179 85
Tools, new and repaired	885 20
Telephone	208 90
Repairs in yard	407 55
New sand boxes	477 86
Supplies	1,021 34
Auto equipment	5,612 64

	<u>\$24,629 54</u>
--	--------------------

Stockroom:

Stock purchased	\$22,707 30
Stock used	20,909 03
Increase in stock	

	<u>1,798 27</u>
--	-----------------

	<u>\$26,427 81</u>
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Tide Water Bridges, 1946.

BRIDGES.	Drawtenders' Salaries.	Mechanics' Wages.	Material.	Repair Bills.	Supplies.	Totals.
Broadway.....	\$15,290 31	\$2,439 83	\$518 49	\$272 33	\$577 73	\$19,098 69
Charlestown.....	31,700 34	4,331 78	2,499 45	3,648 80	1,353 07	43,533 44
Chelsea North.....	21,700 97	2,290 65	527 10	2,000 06	1,145 00	27,663 78
Chelsea South.....	21,716 18	2,228 63	1,027 69	1,174 95	761 45	26,953 90
Chelsea Street.....	21,419 42	1,457 81	85 26	1,540 87	603 25	25,106 61
Congress Street.....	22,059 37	1,108 74	168 47	892 17	733 74	24,962 49
Dorchester Avenue *....	8,102 78	206 93	74 54	.....	114 79	8,499 04
Dover Street.....	15,962 76	2,172 14	517 86	207 43	475 59	19,335 78
L Street †.....	21,006 23	1,307 23	164 09	351 01	610 65	23,439 21
Malden.....	22,293 71	719 78	201 49	362 90	869 96	24,447 84
Meridian Street.....	22,381 53	2,345 54	419 38	2,190 82	668 76	28,006 03
Northern Avenue.....	21,108 39	4,379 13	2,081 78	3,463 11	3,299 62	34,332 03
Summer Street.....	21,437 01	4,005 74	548 75	2,517 02	403 26	28,938 78
Warren.....	22,021 54	6,045 65	2,222 98	2,539 92	715 84	33,545 93
Totals.....	\$288,235 54	\$35,039 58	\$11,057 33	\$21,161 39	\$12,359 71	\$367,863 55

* Transferred to State Department of Public Works on June 30, 1946, as of January 1, 1946. City reimbursed for these expenditures by the State.

† Now Summer Street, over Reserved Channel.

Repairs on Inland Bridges, 1946.

BRIDGES.	Labor and Material.
B Street.....	\$149 82
Babson Street.....	294 40
Bennington Street.....	601 43
Blakemore Street.....	815 18
Boylston Street.....	404 57
Braddock Park (foot).....	254 74
Broadway Extension.....	454 24
Butler Street (foot).....	223 53
Camden Street-Gainsborough Street (foot).....	406 11
Central Avenue.....	1,374 39
Cummins Highway.....	444 77
Dana Avenue.....	417 69
Dartmouth Street (rent \$300).....	506 50
Carried forward.....	\$6,347 37

Repairs on Inland Bridges, 1946.—Concluded.

BRIDGES.	Labor and Material.
<i>Brought forward</i>	\$6,347 37
Durham Street—West Rutland Square (foot)	391 03
Everett Street.....	906 50
Everett Street, East Boston.....	294 90
Fairmount Avenue.....	698 19
Follen Street (foot).....	219 76
Freeport Street.....	901 43
Glenwood Avenue.....	653 75
Gove Street (foot).....	434 32
Jones Avenue (foot).....	675 56
Massachusetts Avenue, over New York, New Haven & Hartford Railroad..	104 10
Metropolitan Avenue.....	289 50
Milton Street.....	356 15
Milton Lower Mills.....	326 65
Neptune Road.....	77 11
New Allen Street.....	611 27
Norfolk Street.....	95 19
Perkins Street (foot).....	388 37
Reservoir Road.....	306 39
Redfield Street.....	395 27
Southampton Street.....	307 12
Toll Gate Way (foot).....	345 85
Tremont Street.....	299 60
Walworth Street.....	136 63
West Fourth Street.....	3,642 16
West Newton Street.....	229 21
Other services.....	721 17
Cleaning and Sanding bridges.....	2,261 04
Total.....	\$22,415 59

SUMMARY.

Administration	\$55,371 48
Yard and stockroom	26,427 81
Tidewater bridges	367,863 55
Inland bridges	22,415 59
Total	<u>\$472,078 43</u>

SPECIAL APPROPRIATION.

BRIDGES, REPAIRS, ETC.

Arlington Street Bridge:		
A. Orlando, Inc.		\$800 00
Boylston Street Bridge:		
Baker & Co.	\$5,569 89	
Flagman service	48 62	
Advertising	27 00	
		5,645 51
Braddock Park (foot):		
Carney Construction Company	\$5,339 17	
Advertising	24 50	
		5,363 67
Broadway Bridge:		
Relocating electric switch	\$403 00	
Patching material	51 19	
		454 19
Central Avenue Bridge:		
John F. Shea Company, Inc.	\$4,917 17	
Inspection of lumber	34 00	
Advertising	24 00	
		4,975 17
Charlestown Bridge:		
Coleman Brothers Company	\$99,125 06	
W. H. Ellis & Son Company	4,238 95	
Gate repairs	278 14	
Advertising	22 00	
		103,664 15
Chelsea South Bridge:		
Repair barriers	\$189 60	
Signal lights	730 00	
Machinery repairs	300 00	
Iron work	48 15	
		1,267 75
Clarendon Street Bridge:		
A. Orlando, Inc.		7,347 80
Dartmouth Street Bridge:		
A. Orlando, Inc.	\$10,151 10	
Advertising	25 50	
		10,176 60
Dover Street Bridge:		
Patching material		50 20
Glendwood Avenue Bridge:		
J. A. Singarella Company	\$11,820 79	
Advertising	20 00	
		11,840 76
Meridian Street Bridge:		
New heater		911 65
Milton Street Bridge:		
Baker & Co.		2,407 04
Carried forward		\$154,904 49

<i>Brought forward</i>		\$154,904 49	
Milton Lower Mills Bridge:			
Patching material		25 35	
Norfolk Street Bridge:			
Repairs to paving		438 84	
Northern Avenue Bridge:			
Machinery repairs		452 29	
Summer Street Public Landing:			
Repairs to float		818 40	
Summer Street Bridge, over Fort Point Channel:			
New concrete high curb	\$991 81		
Electrical repairs	545 66		
			1,537 47
Summer Street Bridge, over Reserved Channel:			
Patching material		25 35	
Warren Bridge:			
Marinucci Brothers Company	\$14,769 12		
James B. Rendle Company	15,652 25		
Fred J. Wallace	26,111 55		
P. J. Cantwell — repair approach	1,922 17		
Machinery parts	500 00		
Patching material	99 89		
Advertising	61 50		
			59,176 48
West Fourth Street Bridge:			
Martin J. Kelly Company, Inc.	\$4,941 06		
Flagman services	518 87		
Advertising	45 50		
			5,505 43
West Rutland Square Bridge:			
Carney Construction Company		4,585 62	
			<u>\$227,469 72</u>

BRIDGES — CONSTRUCTION OF.

Allston Bridge:		
Frederick W. Byron		\$7,587 66
Boylston Street Bridge:		
Marinucci Brothers Company	\$5,550 60	
Inspection of material	1 00	
Engineering	324 76	
		5,876 36
Boylston Street Bridge:		
Inspection of material		29 21
Dorchester Avenue Bridge:		
Marinucci Brothers Company	\$5,951 15	
Inspection of material	4 99	
Engineering	324 76	
		6,280 90
Meridian Street Bridge:		
Charles A. Maguire Associates	\$37,169 28	
Permit	1 00	
Engineering	5,553 99	
		42,724 27
Milton Street Bridge:		
Inspection of material		16 23
Southampton Street Bridge:		
Marinucci Brothers Company	\$5,897 03	
Inspection of material	4 00	
Engineering	324 79	
		6,225 82
Sprague Street Bridge:		
Baker & Co	\$3,083 17	
Inspection of material	50 87	
		3,134 04
Summer Street Bridge, over Fort Point Channel:		
V. Grande	\$42,601 58	
Inspection of material	23 08	
Engineering	1,012 61	
		43,637 27
Summer Street Bridge, over Fort Point Channel:		
Marinucci Brothers Company		7,290 79
Total		<u>\$122,802 55</u>

*Departmental Equipment Non-Revenue Bridge Service,
Marine Equipment.*

Five 12-foot Lap-Strake Boats.

One to Chelsea Street Bridge.		
One to Dover Street Bridge.		
One to Northern Avenue Bridge.		
One to Summer Street Bridge.		
One to Warren Bridge.		
Total		<u>\$660 75</u>

SUMMARY.

Expenditures From Special Appropriations.

	Balance from 1945.	Total Credits, Including Balances Carried Over and Transfers.	Expended During Year 1946.	Unexpended Balances December 31, 1946.
Bridges, repairs, etc.....	\$78,675 53	\$278,675 53	\$227,409 75	\$51,265 78
Bridges, construction of,	2,556,393 50	2,556,393 50	122,802 55	2,433,590 95
Departmental equipment, non-revenue bridge service, marine equip- ment.....	.....	9,500 00	660 75	8,839 25
Totals.....	\$2,635,069 03	\$2,844,569 03	\$350,873 05	\$2,493,695 98

Draw Openings, 1946.

Bridges.	Steamers.			Sailing Vessels.			Tugs.			Barges.			All Others.			Total Number of Vessels.			Total Number of Caroes.	Total Number of Openings.
	Day.		Total.	Day.		Total.	Day.		Total.	Day.		Total.	Day.		Total.	Day.		Total.		
	Day.	Night.		Day.	Night.		Day.	Night.		Day.	Night.		Day.	Night.		Day.	Night.			
Broadway.....	.....	.....	.....	.....	.....	.....	518	14	532	46	3	49	416	17	433	980	34	1,014	221	527
Charlestown.....	60	53	113	124	15	139	427	116	543	227	134	361	282	24	306	1,120	342	1,462	303	572
Chelsea North.....	1,075	60	1,135	.....	.....	.....	8,696	1,256	9,952	1,508	659	2,167	531	75	606	11,810	2,050	13,860	1,960	5,507
Chelsea South.....	52	19	71	.....	.....	.....	924	627	1,551	309	291	600	2	0	2	1,287	937	2,224	411	1,292
Chelsea Street.....	816	447	1,263	.....	.....	.....	2,790	714	3,504	480	288	768	316	99	415	4,402	1,548	5,950	1,011	3,242
Congress Street.....	50	31	81	.....	.....	.....	1,093	207	1,300	171	25	196	671	67	738	1,985	330	2,315	658	1,399
Dorchester Avenue *	.....	.....	.....	.....	.....	.....	310	12	322	18	4	22	248	3	251	576	19	595	116	299
Dover Street.....	.....	.....	.....	.....	.....	.....	511	4	515	52	5	57	405	8	413	968	17	985	212	553
L Street †.....	7	.....	7	1	2	3	446	634	1,080	254	227	481	2,002	1,782	3,784	2,710	2,645	5,355	1,171	4,925
Malden.....	25	22	47	1	.....	1	1,069	288	1,357	210	100	310	899	222	1,121	2,204	632	2,836	449	1,791
Meridian Street.....	833	225	1,058	.....	.....	.....	6,701	1,700	8,401	2,582	1,323	3,905	2,864	526	3,390	1,2980	3,774	16,754	2,475	9,099
Northern Avenue.....	50	29	79	.....	.....	.....	2,727	450	3,177	170	37	207	1,654	203	1,857	4,601	719	5,320	800	2,576
Summer Street.....	51	28	79	.....	.....	.....	1,013	215	1,228	140	32	172	646	123	769	1,850	398	2,248	432	1,247
Warren.....	7	1	8	84	1	85	557	186	743	285	212	497	1,165	603	1,768	2,098	1,002	3,100	404	1,735
Totals.....	3,026	915	3,941	210	18	228	27,782	6,123	34,205	6,452	3,340	9,792	12,101	3,752	15,853	49,571	14,447	64,018	10,623	34,764

* Transferred to State Department Public Works on June 30, 1946, as of January 1, 1946. Openings listed are for the period from January 1 to June 30, 1946.

† Now Summer Street, over Reserved Channel.

FERRY SERVICE.

FINANCIAL STATEMENT FOR THE YEAR ENDING DECEMBER 31, 1946.

Toll Receipts.

Total cash receipts during the year	\$12,599 27
Cash in hands of tollmen at beginning of year.	\$60 00
Cash paid over to City Collector	\$12,599 27
Cash in hands of tollmen, December 31, 1946,	\$60 00

Breakdown of Toll Receipts.

From foot passengers	\$3,568 42
From vehicles	\$9,030 85

	From Foot Passengers.	From Vehicles.	Totals.
Boston side.....	\$1,792 01	\$4,500 55	\$6,292 56
East Boston side.....	1,776 41	4,530 30	6,306 71
Totals.....	\$3,568 42	\$9,030 85	\$12,599 27

TRAVEL ON THE SOUTH FERRY FROM JANUARY 1, 1946, TO DECEMBER 31, 1946, INCLUSIVE.

Foot passengers at 1 cent 356,842

Handcart, or wheel barrow and man.....	5 cents	} 10,301
Horse and rider.....	5 cents	
Horse and cattle, each with attendant.....	5 cents	
One- or two-horse vehicle with driver.....	5 cents	
Motorcycle with driver.....	5 cents	

Trailer.....	10 cents	} 61,288
Three- or four-horse vehicle with driver.....	10 cents	
Passenger automobile with driver and one passenger,	10 cents	

Passenger automobile with driver and more than one
passenger..... 15 cents 589

Motor truck, six tons or less, with driver..... 15 cents 9,799

Motor truck, over six tons, with driver..... 20 cents }
Auto bus with driver..... 20 cents } 4,144

Auto bus with driver and passenger..... 30 cents —

Free vehicles..... 92

SUMNER TRAFFIC TUNNEL.
ANNUAL TRAFFIC BY CLASSIFICATION FOR THE YEAR 1946.

TOLL.	20 Cents.		20 Cents.		25 Cents.		20 Cents.		35 Cents.		1 Dollar.		35 Cents.		* City Owned.	Total Traffic.
	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.	No. 7.	No. 8.	No. 9.	No. 10.	No. 11.	No. 12.	No. 13.	No. 14.		
CLASSIFICATION.																
January.....	24,132	485,929	78	4,144	553	2,431	19	22	10						38,734	556,052
February.....	26,017	440,173	72	2,371	550	753	18	18	7						32,419	502,398
March.....	28,073	581,121	178	2,198	900	783	34	12	4						36,946	650,249
April.....	33,719	598,402	169	2,428	1,204	1,276	31	22	0						36,147	673,398
May.....	31,106	678,648	330	2,335	1,754	851	29	19	5						35,987	751,619
June.....	31,014	749,978	349	2,599	1,736	711	17	27	6						31,015	817,452
July.....	31,089	768,196	355	2,547	1,609	539	14	34	7						30,414	834,804
August.....	37,793	750,414	304	2,797	1,739	478	7	27	6						27,862	821,427
September.....	28,260	689,216	290	2,257	1,520	553	15	21	24						25,889	748,045
October.....	35,960	698,970	340	2,353	1,601	580	18	33	16						35,068	774,939
November.....	26,653	606,524	124	1,974	1,261	436	14	15	1						31,780	668,782
December.....	27,593	572,661	45	2,168	924	481	8	20	5						29,651	633,556
Totals.....	361,409	7,620,232	2,634	30,771	15,351	9,872	224	270	91						†391,912	8,432,721

* Military vehicles, Boston Elevated Railway and Eastern Massachusetts Railway busses are included in this classification.

† 67,428 military vehicles at 20 cents; 28,639 Boston Elevated Railway busses at 35 cents; and 211,129 Eastern Massachusetts Railway busses at 35 cents are included in this total.

SUMNER TRAFFIC TUNNEL.

Comparison of Receipts, Expenditures, Interest and Sinking Fund Requirements,
1942 to 1946, Inclusive.

	1942.	1943.	1944.	1945.	1946.
Expenditures.....	\$253,169 54	\$243,257 21	\$260,220 64	\$288,390 83 * 6,293 00	\$342,309 05
Interest Requirements.....	830,487 50	825,995 00	836,411 25	831,540 00	831,207 50
Sinking Fund Requirements.....	271,577 00	272,549 00	273,024 00	265,107 00	§
Total Expenditures.....	\$1,355,234 04	\$1,341,801 21	\$1,369,655 89	\$1,391,330 83	\$1,173,516 55
Receipts.....	991,160 64	1,026,227 33	1,288,104 38	1,455,246 18	1,709,491 00
	† \$364,073 40	† \$315,573 88	† \$81,551 51	† \$63,915 35	† \$535,974 45
Transferred from toll receipts to primary sinking fund.....			136,627 61		
			† \$218,179 12		

* Carried forward to cover contract.

† Deficit. ‡ Excess.

§ None required.

SUMNER TRAFFIC TUNNEL.

Comparative Traffic Count.

	1942.	1943.	1944.	1945.	1946.
January.....	528,392	354,106	440,178	441,270	556,052
February.....	499,935	357,103	423,318	387,436	502,398
March.....	580,371	465,245	455,999	537,348	650,249
April.....	609,665	444,604	471,847	549,639	673,398
May.....	628,151	498,689	590,106	604,066	751,619
June.....	652,020	487,746	650,255	684,783	817,452
July.....	642,056	557,116	680,787	799,390	834,804
August.....	574,917	568,911	631,264	761,057	821,427
September.....	543,220	542,060	572,112	638,409	748,045
October.....	536,787	502,399	519,426	652,256	774,939
November.....	510,650	470,066	502,798	611,139	668,782
December.....	464,691	467,954	511,844	557,772	633,556
Totals.....	6,770,855	5,715,999	6,449,934	7,224,565	8,432,721

SUMNER TRAFFIC TUNNEL.

TOLL CLASSIFICATIONS.

Class 1.	\$0.20	Truck not in excess of 2 tons capacity. Tractor without trailer.
Class 2.	0.20	Passenger car.
Class 3.	0.20	Motorcycle.
Class 4.	0.25	Truck over 2 tons and up to 5 tons capacity. Tractor with trailer over 2 tons and up to 5 tons capacity.
Class 5.	0.20	Passenger car with trailer.
Class 6.	0.35	Truck over 5 tons and up to 10 tons capacity. Tractor with trailer over 5 tons and up to 10 tons capacity.
Class 7.	0.20	Tractor with trailer not in excess of 2 tons capacity.
Class 8.	1.00	Truck over 10 tons capacity. Tractor with trailer over 10 tons capacity.
Class 9.	0.35	Bus with or without passengers.

APPENDIX B

REPORT OF THE DIVISION ENGINEER OF THE
HIGHWAY DIVISION.

BOSTON, January 2, 1947.

To the Commissioner of Public Works.

DEAR SIR,— I submit the following report of the operations and expenditures of the Highway Division for the year ending December 31, 1946:

Maintenance.

Appropriation for 1946	\$1,054,147 56
Amount expended	1,013,933 24
Balance unexpended	<u>\$40,214 32</u>

The amount of money taken in through the Permit Office of the Paving Service was \$34,416.36. Of this amount \$31,456.21 was deposited with the City Collector and \$2,960.15 was billed to the Public Service Corporations. There are now on file 2,298 bonds for use of streets and sidewalks covering the City of Boston against claims for damages, etc., through the use of permits.

The regular forces of the Paving Service were employed as usual in the maintenance of all public streets, resurfacing and patching macadam pavements, patching all permanent pavement such as asphalt, granite blocks, etc., and taking care of all gravel, brick and artificial stone sidewalks.

Contracts were let for the construction and reconstruction of sixty-seven streets during the year and sixty were completed. Work was also completed on forty-two streets that were carried over from 1945.

Some of the most important thoroughfares reconstructed during the year are as follows:

Neponset avenue, Adams to Minot streets.

Washington street, Morton to Walk Hill streets.

Columbus avenue, Northampton to Station streets.

Morton Street, Druid to Washington streets.
Day square and Bennington street.
Bremen street, Porter to Bennington streets.
Harvard avenue, Cambridge street to Brookline line.

LIGHTING SERVICE.

The following is a statement of the work done during 1946 under the supervision of the Division Engineer:

The Lighting Service appropriation of the Highway Division called for \$977,895.11, and \$975,012.23 was expended, leaving a balance of \$2,882.88.

Electric lamps of 1,000 c.p. were installed as follows: Albany street (1), City Proper; Gaffney street (4), Hano street (2), Penniman road (4), Brighton; Columbia road (2), Norfolk street (1), Dorchester; Chelsea street (15), East Boston; Columbus avenue (16), Dudley street (2), Roxbury; Boston street (2), South Boston; Belgrade avenue (1), Centre street (16), Fallon Field (3), West Roxbury.

Electric lamps of 600 c.p. were installed as follows: Cambridge street (1), Brighton; Sullivan street (1), Charlestown; East Eagle street (1), East Boston; Gordon avenue (1), Hyde Park; East Second street (1), South Boston; Columbus avenue (46), Magazine street (1), Roxbury.

Electric lamps of 400 c.p. were installed as follows: Jerusalem place (1), City Proper; Marginal street (1), East Boston; Harvard avenue (1), Hyde Park; Amory street (1), Schuyler street (1), Roxbury.

Electric lamps of 250 c.p. were installed as follows: Maple street (1), Hyde Park; Pershing road (4), Weld street (1), West Roxbury.

Electric lamps of 80 c.p. were installed as follows: Monastery Path (9), Perle street (1), Undine road (1), Brighton; Green street (1), Haverhill street (1), Roland street (1), Wall street (2), Charlestown; Burgoyne street (1), Beaufield street (2), Dyer street (1), Walnut street (1), Dorchester; Adams avenue (1), Neponset avenue (1), Oakwood street (1), Taunton avenue (1), Wood avenue (1), Hyde Park; Sonoma street (1), Roxbury; Dixfield street (2), Hill place (1), South Boston; Addington road (1), Averton street (1), Baker street (1), Franklin Hill avenue (5), Garrett street (1), Germania street (1), Hautevale street (3), Hobson street (1), Kerna road (2), Mount Hope street (1), Neillian Crescent (2), Neponset court (2), Parklawn

road (1), Russett road (1), Saville street (1), Stearns road (2), Tobin road (2), Walnut road (1), Winchester terrace (1), West Roxbury.

Electric fire alarm lamps were installed as follows: Langley road (1), Oak square (1), Brighton; Dorchester avenue (1), Dorchester; Brookline avenue (1), Roxbury; West Fourth street (1), South Boston; La Grange street (1), Mendum street (1), Walter street (2), West Roxbury.

Respectfully,

R. C. DWYER,
Division Engineer.

TABLE SHOWING LENGTH AND AREA OF PAVING ON ACCEPTED STREETS, CORRECTED TO JANUARY 1, 1947.

	LENGTH IN MILES.											AREA IN SQUARE YARDS.										
	Sheet Asphalt.	Asphalt Concrete.	Granite Block.	Wood Block.	Plank on Bridges.	Brick.	Concrete.	Macadam.	Gravel.	Not Graded.	Totals.	Sheet Asphalt.	Asphalt Concrete.	Granite Block.	Wood Block.	Plank on Bridges.	Brick.	Concrete.	Macadam.	Gravel.	Not Graded.	Totals.
Year 1945 Report.....	*152.51	†228.74	‡71.10	0.66	0.70	0.97	\$27.70	‡13.13	13.49	1.64	710.64	*3,015,064	†4,315,715	‡1,889,958	14,113	15,923	38,732	\$942,694	‡3,172,482	113,510	41,508	13,559,699
Per Cent.....	21.46	32.19	10.00	0.09	0.10	0.14	3.90	29.99	1.90	0.23	100.00	22.23	31.83	13.94	0.10	0.12	0.28	6.95	23.40	0.84	0.31	100.00
JANUARY 1, 1947.																						
City Proper.....	37.47	27.36	22.74	0.24	0.13	0.40	3.23	4.63	0.22	.....	96.42	782,958	616,275	514,041	3,206	3,750	6,568	112,390	72,128	1,563	.....	2,112,879
Charlestown.....	2.64	4.49	8.88	0.08	0.07	.....	0.34	6.20	0.00	0.05	22.75	56,917	69,911	216,032	2,011	1,999	.....	4,941	87,946	80	246	440,083
East Boston.....	4.85	11.37	5.06	0.01	0.05	0.04	0.44	13.77	0.73	.....	36.32	114,417	230,253	119,138	325	777	771	25,280	296,752	14,809	.....	802,522
South Boston.....	8.81	11.92	10.08	0.04	0.10	0.12	0.51	11.78	0.09	0.50	43.95	176,776	232,450	280,588	1,167	2,707	2,986	16,411	208,690	1,024	15,754	933,553
Roxbury.....	26.85	26.87	10.66	0.10	.....	0.14	7.22	21.69	0.52	0.00	94.05	507,844	486,960	266,998	2,689	.....	5,438	122,855	321,679	7,359	61	1,721,883
West Roxbury.....	29.49	50.25	3.17	0.01	0.07	.....	5.32	53.28	1.87	0.17	143.63	556,895	903,577	144,044	210	1,363	.....	75,953	835,052	30,430	10,387	2,557,911
Dorchester.....	37.63	60.11	6.80	0.06	0.05	0.27	6.69	55.97	1.59	0.01	169.18	709,226	1,056,330	194,160	1,669	795	5,425	119,302	871,349	25,693	1,398	2,985,347
Brighton.....	12.89	32.35	0.57	.....	0.08	.....	2.27	15.04	0.48	.....	63.68	292,145	596,418	69,700	371	1,231	.....	48,765	257,292	8,947	1,499	1,276,368
Hyde Park.....	1.46	9.63	0.05	0.09	0.03	.....	0.94	23.23	6.45	0.24	42.12	32,156	204,848	8,231	1,326	443	.....	17,373	395,095	101,485	7,255	768,212
Totals.....	162.09	234.35	68.01	0.63	0.58	0.97	26.96	205.59	11.95	0.97	712.10	3,229,334	4,397,022	1,812,932	12,974	13,065	21,188	543,270	3,340,983	191,390	36,600	13,598,758
Per Cent.....	22.76	32.91	9.55	0.09	0.08	0.14	3.78	28.87	1.68	0.14	100.00	23.75	32.33	13.33	0.09	0.10	0.16	3.99	24.57	1.41	0.27	100.00

TOTAL PUBLIC STREETS 712.10 MILES.

NOTE.—In the above table the city is subdivided substantially on the boundary lines between the districts as they existed when annexed to Boston. Territory annexed from Brookline included in City Proper.

*Of this amount 0.10 mile or 834 square yards is Bitulithic; and 0.00 mile or 310 square yards is Unionite.

†Of this amount 0.02 mile or 185 square yards is cobble; and 44.33 miles or 1,373,257 square yards is granite block paving on concrete base.

‡Of this amount 0.06 mile or 924 square yards is Blome granitoid concrete block.

§Of this amount 169.58 miles or 2,775,158 square yards is bituminous macadam.

6.66 miles or 35,444 square yards public alleys included in this table; 7.55 miles or 335,639 square yards public streets in charge of Park Department included in this table; 7.06 miles or 237,812 square yards public streets in charge of Commonwealth of Massachusetts included in this table. In addition to this table there are 2.18 miles or 10,769 square yards of accepted footways.

†Of this amount 127.45 miles or 2,238,041 square yards is asphalt concrete; and 98.29 miles or 1,996,331 square yards is Bitulithic; and 0.02 mile or 4,373 square yards is Colprovia; and 0.06 mile or 942 square yards is Fibertine; and 4,000 square yards is Hepburnite; and 3,903 square yards is Laykold; and 4,167 square yards is Macasphalt; and 0.21 mile or 5,200 square yards is Simaseco; and 7.95 miles or 128,559 square yards is Topeka; and 4,153 square yards is Warecolite; and 0.18 mile or 3,474 square yards is Carey Elastite asphalt plank; and 0.08 mile or 2,045 square yards is Flintkote asphalt plank; and 0.11 mile or 1,234 square yards is Johns-Manville asphalt plank.

HIGHWAY DIVISION — PAVING SERVICE.

Work Done by Contract, 1946.

Type of Work.

Earth excavation	88,563 cubic yards.
Rock and wall excavation	728 cubic yards.
Bank gravel filling	71,018 tons.
Crushed stone	3,004 tons.
Old concrete base removed	16,315 square yards.
Old pavement removed	90,486 square yards.
Scarifying	1,122 square yards.
Fine grading	1,412 square yards.
Straight granite edgestone set	12,167 linear feet.
Straight precast edgestone set	6,467 linear feet.
Circular granite edgestone set	2,465 linear feet.
Circular precast edgestone set	239 linear feet.
Edgestone reset	47,526 linear feet.
Cement concrete base (cubic yards)	8,282 cubic yards.
Cement concrete base (square yards)	105,400 square yards.
Bituminous macadam base	66,547 square yards.
Granite block hip gutter	2,838 square yards.
Sheet asphalt pavement and binder (3 inch)	81,706 square yards.
Sheet asphalt pavement (square yards) (1½ inch)	162,795 square yards.
Sheet asphalt pavement (tons)	581 tons.
Sheet asphalt binder	18,884 tons.
Bituminous concrete pavement	153,735 square yards.
Bituminous concrete binder	1,243 tons.
Cement concrete pavement	6,951 square yards.
Artificial stone sidewalks and driveways	464,121 square feet.
Brick sidewalks	2,008 square yards.
Bituminous concrete sidewalks	3,525 square yards.
Loam spaces	1,171 square yards.
Bradley heads reset	49
Covers reset	2,801
Brick courses	4,947
Masonry	40 cubic yards.
Wire fence	464 linear feet.
Wood fence	648 linear feet.
Flagstone walk in reservation	7,186 square feet.

YEARLY REPORT OF WORK DONE BY DEPARTMENT
FORCES FOR 1946.

Brick sidewalks, laid and relaid	9,503 square yards.
Gravel sidewalks, relaid	8,740 square yards.
Granolithic sidewalks, relaid (old)	106,379 square feet.
Granolithic sidewalks, laid (new)	18,673 square feet.
Tar sidewalks	33,066 square yards.
Block gutters, laid	88 square yards.
Granite block roadway, laid	493 square yards.
Edgestone set (new)	82 linear feet.
Edgestone reset (old)	6,595 linear feet.
Macadam roadway, patched	114,032 square yards.
Macadam roadway, resurfaced	7,285 square yards.
Street cleaning	65,482 cubic yards.
Snow removal	41,046 cubic yards.

Objects of Expenditures from Maintenance Appropriation, Classified by Districts, from January 1, 1946, to
December 31, 1946.

Districts.	Macadam Repairs.	Granolithic Sidewalk Repairs.	Removal of Snow.	Street Cleaning.	Edgestone, Sidewalk and Gutter Repairs.	Bituminous Sidewalk Repairs.	Miscellaneous.	Total.
South Boston and Dorchester North.....	\$5,060 30	\$8,101 92	\$2,742 18	\$4,648 33	\$8,480 76	\$246 65	.....	\$29,370 14
East Boston.....	12,648 03	835 88	519 70	5,900 48	1,559 76	1,066 84	.....	22,530 69
Charlestown.....	5,035 36	2,880 83	3,097 07	3,069 38	3,484 07	3,133 14	.....	20,699 85
Brighton.....	11,142 19	3,997 64	3,010 11	19,393 47	1,898 00	359 50	.....	39,800 91
West Roxbury.....	29,094 75	15,130 18	7,083 19	15,054 77	1,993 58	1,738 99	.....	70,095 46
Dorchester.....	13,886 94	8,166 41	4,130 05	4,383 58	1,882 26	7,010 49	.....	39,459 73
Roxbury South and Jamaica Plain.....	14,037 13	18,711 33	3,082 77	6,187 19	1,410 76	4,609 91	.....	48,039 09
City Proper.....	22,430 35	10,012 42	3,604 68	4,222 28	7,910 56	.....	.....	48,180 29
Ashmont.....	13,183 42	11,237 50	4,742 72	6,633 25	6,447 30	200 00	.....	42,444 19
Hyde Park.....	7,966 24	497 75	1,219 50	8,854 99	1,544 99	4,719 42	.....	24,802 89
Totals.....	\$134,484 71	\$79,661 86	\$33,231 97	\$78,347 72	\$36,612 04	\$23,084 94	\$628,510 00	\$1,013,933 24

Miscellaneous includes: Street signs, \$19,558.08; sanding icy streets, \$13,990.47; fence repairs, \$4,284.61; granite block roadway repairs, \$157.83; F-7, \$15,078.40; F-11, \$3,941.15; miscellaneous, \$571,499.46.
 Special Appropriations: Reconstruction of Streets (revenue), \$211,805.80; Public Ways, Construction of (revenue), \$158,351.46; Public Ways, Construction of (non-revenue), \$1,403,297.01; Sidewalks, Construction and Reconstruction of (revenue), \$55,536; Snow Removal, (revenue), \$280,302.72; Totals, Specials, \$2,109,292.99.
 Totals, Maintenance and Specials, \$3,123,226.23.

PAVING SERVICE, 1946.

Street cleaning	\$78,347 72
Macadam repairs	134,484 71
Edgestone and sidewalk repairs	36,612 04
Snow removal	33,231 97
Artificial stone sidewalk repairs	79,661 86
Street signs	19,558 08
Sanding icy streets	13,990 47
Fence repairs	4,284 61
Bituminous sidewalk repairs	23,084 94
Injured employees	3,941 15
Pension	15,078 40
Miscellaneous (Schedule "A")	571,657 29
Total	<hr/> \$1,013,933 24

PERMIT OFFICE ACTIVITIES, 1946.

Under classes 1 and 2 of the schedule of permit fees, permits were issued for openings in public ways as follows:

City departments	2,321
Public service corporations (class 1)	2,314
Public service corporations (class 2)	1,771
Total	<hr/> 6,406
Permits for street openings (class 1)	798
Occupation permits for painting, repairs to buildings (class 3)	3,344
Erecting and repairing awnings (class 5)	89
Erecting and repairing signs (class 7)	303
Raising and lowering machinery (class 8)	60
Special permits (class 9)	312
	<hr/> 4,906
Total of all permits	<hr/> <u>11,312</u>

Fees received, \$34,416.36. Deposited with City Collector, \$31,456.21. Billed to public service corporations, \$2,960.15. Total, \$34,416.36.

BONDS.

There are now on file 2,189 bonds protecting the City of Boston against claims that may be made on account of permits issued.

APPENDIX C.

 REPORT OF THE DIVISION ENGINEER OF
 THE SANITARY DIVISION.

BOSTON, January 2, 1947.

To the Commissioner of Public Works.

DEAR SIR,—I submit herewith a statement of the activities and expenditures of the Sanitary Division of the Public Works Department for the year ending December 31, 1946:

Maintenance expenditures	\$3,589,748 10
Emergency compensation allotments	77,771 09
Cost	<u>\$3,668,519 19</u>
I. Waste collection and disposal (Table I)	<u>\$2,527,640 86</u>
(a) By contract (Table II)	\$1,787,517 66
(b) By day labor (Table III)	740,123 20
II. Street cleaning (Table IV)	\$1,060,429 22
III. Not directly chargeable to 1946 operation	\$80,449 11
(a) Pensions	\$23,144 18
(b) Injured roll	5,668 91
(c) Preventive street cleaning	39,577 20
(d) Special clean-up	12,058 82
Personnel changes in permanent force:	
Total personnel January 1, 1946	*860
Transfers from other departments and divisions	5
New appointments	192
Reinstatements	5
	— 202
	— 1,062
Deaths	14
Resignations	21
Retirements	29
Transfers out	13
Discharged or terminated	50
	— 127
Total personnel January 1, 1947	<u>†935</u>

* Including two military leaves.

† Including two military leaves.

The 1946 expenditures and costs show a net increase over those of last year amounting to \$194,245.07.

There were increases in the various accounts as follows: Waste contract collection, \$190,665.98. This

was occasioned by a general increase in the prices of the contracts amounting to about \$87,000, and a special increase in the Brighton district of \$63,000 for the nine months during which it was necessary for the Brighton waste material to be hauled to the Mile Road dump in South Boston.

There was also an increase in the disposal contract amounting to \$49,000, a part of which, however, must be charged to the day labor expenditures, and \$12,000 charged to the Brighton district.

There was an increase of \$120,524.02 in the street cleaning force expenditures, due to the transfer of men to this service from the day labor sanitary service, and the creation of a new district.

Decreases were shown in the day labor waste collection service which amounted to a net decrease of \$45,874.07.

This reduction reflected two things: (a) a drop in the motor cleaning account from \$136,391.87 in 1945 to \$89,864.42 in 1946, or a net drop, on account of having more repair work done in the municipal garage, amounting to \$46,527.44; (b) an actual drop in the personal service account in the three day-labor waste collection districts amounting to \$15,193.19.

Other decreases were as follows: The paper salvage drive which in 1945 accounted for \$40,204.29, does not appear this year. A preventive street-cleaning item shows a drop of \$18,488.48, and the cost of the clean-up in 1946 was \$16,264.56 less than this cost for 1945.

Among the various activities of this division during the year of 1946 were the following:

On account of the shutting down of the Watertown dump, it was necessary to transport the Brighton refuse to a city-owned dump on Mt. Vernon street, and after this dump was closed by order of the Health Department, to a dump owned by Coleman Disposal Company, for the use of which the city paid \$3,000 a month. The original Brighton district contract, with dumping privileges in Watertown, was at the rate of \$10,000 a month, for the first three months of the year. Since the necessity of hauling to South Boston, the price was increased to \$17,000 a month.

The construction of an incinerator in the Brighton district was provided for by a loan of \$200,000, and borings were made at the proposed site at the City Yard on Western avenue.

Extensive repairs were made at the Albany Street Disposal Station, which was in a dangerous condition.

At the Ward Street Sand Hopper Station, repairs were made to the windows, and a door installed; also, structural work underneath the ramp.

An equipment loan was authorized, which was intended to be used to replace all the motor vehicle equipment in the Sanitary and other divisions of the Public Works Department, but only a small part of this equipment was received during 1946.

On August 21, 1946, a new street-cleaning district was created in the Jamaica Plain area, which was formerly taken care of by the Paving Service of the Highway Division.

A spring clean-up drive was conducted, which lasted about four weeks, and was accomplished in an unusually efficient manner by the use of hired trucks and men as well as the regular city forces and equipment.

The work of the Sanitary Division, in cleaning up the streets after the Veterans of Foreign Wars parade on September 5, was praised and editorially commented upon by the Boston newspapers.

Respectfully submitted,

ADOLPH J. POST.

Division Engineer.

TABLE 1.
Amount Expended for the Collection and Disposal of Ashes and Garbage by Districts, 1946.

Number.	District.	Population.	MIXED REFUSE.		GARBAGE.		Total Cost.	Total Cost Per Capita.
			Cost.	Per Capita.	Cost.	Per Capita.		
1.	South Boston.....	56,247	\$162,798.84	\$2.894	\$7,154.43	\$0.127	\$169,953.27	\$3.021
2.	East Boston.....	55,112	99,664.11	1.808	3,640.89	0.066	103,305.00	1.874
3.	Charlestown.....	25,655	77,788.15	3.032	—	—	77,788.15	3.032
4.	Brighton.....	66,808	195,553.53	2.927	11,503.44	0.172	207,056.97	3.099
5 and 5a.	West Roxbury and Jamaica Plain.....	89,621	172,731.98	1.927	24,984.04	0.279	197,716.02	2.206
6.	Dorchester and	217,047	482,257.32	2.222	67,580.51	0.311	549,837.83	2.533
7a.	Elm Hill.....							
7.	Roxbury.....	34,489	209,604.30	6.077	—	—	209,604.30	6.077
7b.	Dudley and	68,825	196,529.65	2.856	21,098.30	0.306	217,627.95	3.162
7c.	Mission Hill.....							
9.	South End.....	42,495	252,010.74	5.932	—	—	252,010.74	5.932
9a.	Back Bay.....	22,042	85,476.95	3.877	—	—	85,476.95	3.877
9b.	Stuart.....	20,144	128,933.62	6.401	—	—	128,933.62	6.401
10.	North and West Ends.....	42,232	278,508.16	6.595	—	—	278,508.16	6.595
11.	Hyde Park.....	25,669	44,408.77	1.732	5,353.13	0.208	49,821.90	1.940
	Totals.....	766,386	\$2,386,326.12	\$3.113	\$141,314.74	\$0.184	\$2,527,640.86	\$3.297

TABLE II.
Cost of Collection and Disposal of Refuse by Contract in City of Boston, 1946.

CONTRACT DISTRICT.	CONTRACTOR.	CHARACTER OF REFUSE.	Cubic Yards.	Cost per District.	Cost per Cubic Yard.	Population.	Total Cost per Capita.
South Boston	Ward General Contracting Company.....	Mixed refuse.....	85,263	\$162,798.84			
		Garbage.....	3,747	7,154.43			
		Totals.....	89,010	\$169,953.27	\$1.909	56,247	\$3.022
East Boston	Edward J. McHugh & Son.....	Mixed refuse.....	82,942	\$99,664.11			
		Garbage.....	3,030	3,640.89			
		Totals.....	85,972	\$103,305.00	\$1.202	55,112	\$1.874
*Charlestown.....	Edward J. McHugh & Son.....	Mixed refuse.....	46,662	\$77,788.15			
		Garbage.....	—	—			
		Totals.....	46,662	\$77,788.15	\$1.667	25,655	\$2.965
Brighton.....	Anthony J. Ryan, Inc.....	Mixed refuse.....	119,354	\$195,553.53			
		Garbage.....	7,021	11,503.44			
		Totals.....	126,375	\$207,056.97	\$2.842	66,808	\$3.099
West Roxbury and Jamaica Plain.	John J. Moore Company.....	Mixed refuse.....	124,813	\$172,731.98			
		Garbage.....	18,053	24,984.04			
		Totals.....	142,866	\$197,716.02	\$1.384	89,021	\$2.206
†Dorchester and Elm Hill.....	Coleman Brothers Corporation.....	Mixed refuse.....	401,645	\$482,257.32			
		Garbage.....	56,284	67,580.51			
		Totals.....	457,929	549,837.83	\$1.201	217,047	\$2.533

* Disposal of garbage and refuse to Coleman Disposal Company.

† Disposal of garbage only to Coleman Disposal Company.

TABLE II. —Concluded.
Cost of Collection and Disposal of Refuse by Contract in City of Boston, 1946.

CONTRACT DISTRICT.	CONTRACTOR.	CHARACTER OF REFUSE.	Cubic Yards.	Cost per District.	Cost per Cubic Yard.	Population.	Total Cost per Capita.
*Dudley and Mission Hill.....	Marinucci Brothers & Co.....	Mixed refuse..... Garbage..... Totals.....	97,658 10,484 108,142	\$196,529.65 21,098.30 \$217,627.95	\$2.012	68,825	\$3.162
*Back Bay.....	Dooley Brothers, Inc.....	Mixed refuse..... Garbage..... Totals.....	50,160 — 50,160	\$85,476.95 — \$85,476.95	\$1.704	22,042	\$3.878
*Stuart.....	Capitol Contracting Company.....	Mixed refuse..... Garbage..... Totals.....	99,502 — 99,502	\$128,933.62 — \$128,933.62	\$1.296	20,144	\$6.401
Hyde Park.....	Mary C. Bryan.....	Mixed refuse..... Garbage..... Totals.....	31,002 3,732 34,734	\$44,468.77 5,353.13 \$49,821.90	\$1.434	25,669	\$1.940
Total.....		Mixed refuse..... Garbage..... Totals.....	1,139,001 102,351 1,241,352	\$1,640,134.54 147,383.02 1,787,517.66	\$1.440	647,170	\$2.762

* Disposal of garbage and refuse to Coleman Disposal Company.

TABLE III.
Cost of Collection and Disposal of Refuse by Day Labor Force in the City of Boston for the Year Ending December 31, 1946.

Number.	DISTRICT AND POPULATION.	CHARACTER OF REFUSE.	Cubic Yards.	COST PER CUBIC YARD.			TOTAL COST.		Total Cost, Collection and Disposal.	Total Cost Per Capita.
				To Collect.	For Disposal.	Collection and Disposal.	Cost to Collect.	Cost for Disposal.		
7.	Roxbury (34,489).....	Mixed refuse.....	87,165	\$1.766	\$0.638	\$2.404	\$153,979.72	\$55,624.58	\$209,604.30	\$6.077
9.	South End (42,465).....	Mixed refuse.....	75,249	\$2.711	\$0.638	\$3.349	\$203,990.38	\$48,020.36	\$252,010.74	\$5.930
10.	North and West Ends (42,232) ..	Mixed refuse.....	121,109	\$1.662	\$0.638	\$2.300	\$201,222.11	\$77,286.05	\$278,508.16	\$6.595
	Totals (119,216)	Mixed refuse.....	283,523	\$1.972	\$0.638	\$2.610	\$559,192.21	\$180,930.99	\$740,123.20	\$6.208

TABLE IV.
 Street Cleaning Service, 1946.
Distribution of Expenditures.

Removing snow	\$95,972 88
Brooming	615,124 60
Pushcart patrol	231,056 95
Refuse box collections	50,907 95
Motor sweeping	61,066 44
Flushing and miscellaneous	6,300 40
Total	<u>\$1,060,429 22</u>

APPENDIX D.

REPORT OF THE DIVISION ENGINEER
OF THE SEWER DIVISION.

BOSTON, January 2, 1947.

To the Commissioner of Public Works.

DEAR SIR,—I submit herewith statement of the activities and expenditures of the Sewer Division for the year ending December 31, 1946.

During the fiscal year 1946, there were built by contractors and day labor 3.54 miles of common sewers and surface drains throughout the city. After deducting 0.02 miles of sewers and surface drains, rebuilt or abandoned, the net increase for 1946 is 3.52 miles, which, added to the existing 1,223.52 miles of common sewers and surface drains and 30.93 miles of intercepting sewers, makes a grand total of 1,257.97 miles of all sewers belonging to the City of Boston, and under the care of the Sewer Division on January 1, 1947.

There were 107 catch-basins built or rebuilt and 52 abandoned or removed during the year, making a net gain of 55 catch-basins and a grand total of 22,689 catch-basins under the care of the Sewer Division on January 1, 1947.

Entrance fees to the amount of \$3,647.04 have been deposited with the City Collector for collection from estates upon which no sewer assessments were ever paid, in accordance with Ordinances of 1925, chapter 27, section 10.

663 permits have been issued, viz.: 270 to district foremen and contractors and 393 to drainlayers for repairing or laying new house drains. Inspectors from this office have personally inspected the work done under these drainlayers' permits.

2,965 complaints have been investigated, and inspectors are instructed to report in writing in each case.

1,467 catch-basin complaints were received.

Reported in writing on 2,817 municipal liens to the City Collector, in accordance with chapter 60, section 25, of the General Laws. Reported orally on about 2,600 requests for information on Municipal liens.

Notices have been mailed to abutters in conformity with the Ordinances, chapter 27, section 8, apprising them of the construction of new sewers or repairs to old sewers.

During the year 1946, 3,047 catch-basins were cleaned by day labor and 2,460 catch-basins were cleaned by contract.

Respectfully,

ROBERT P. SHEA,
Division Engineer.

**Summary of Sewer Construction for Twelve Months Ending
December 31, 1946.**

DISTRICTS.	Built by the City either by Contract or Day Labor.	Built by Private Parties.	Total Lengths Built.	
	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Miles.</i>
City Proper.....	354.40	.....	354.40	0.0671
Roxbury.....	70.00	.....	70.00	0.0133
South Boston.....	227.35	.....	227.35	0.0431
East Boston.....	None.	None.	None.	None.
Charlestown.....	None.	None.	None.	None.
Brighton.....	None.	None.	None.	None.
West Roxbury.....	10,144.55	.....	10,144.55	1.9251
Dorchester.....	1,066.20	4,463.00	5,529.20	1.0475
Hyde Park.....	2,341.88	.....	2,341.88	0.4435
Totals.....	14,204.38	4,463.00	18,667.38	3.5396

**Summary of Sewer Construction for Five Years Previous to
January 1, 1947.**

	1942.	1943.	1944.	1945.	1946.
	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Linear Feet.</i>
Built by city by contract or day labor...	10,181.74	2,008.53	2,457.36	6,388.17	14,204.38
Built by city under auspices of W. P. A., etc.....	457.00	.....	.....	.....	.....
Built by private parties or other city departments.....	1,968.20	.....	270.50	.....	4,463.00
Totals.....	12,606.94	2,008.53	2,727.86	6,388.17	18,667.38

Total Length of Sewers.

DISTRICTS.	Total Lengths Built During Twelve Months Ending December 31, 1946.	Lengths Removed or Abandoned During Twelve Months Ending December 31, 1946.	Additional Lengths for the Twelve Months Ending December 31, 1946.	
	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Miles.</i>
City Proper.....	354.40	36.00	318.40	0.0603
Roxbury.....	70.00	.....	70.00	0.0133
South Boston.....	227.35	.....	227.35	0.0431
East Boston.....	None.	None.	None.	None.
Charlestown.....	None.	None.	None.	None.
Brighton.....	None.	None.	None.	None.
West Roxbury.....	10,144.55	.....	10,144.55	1.9251
Dorchester.....	5,529.20	60.00	5,469.20	1.0358
Hyde Park.....	2,341.88	.....	2,341.88	0.4435
Totals.....	18,667.38	96.00	18,571.38	3.5211

Grand Total Length of Sewers.

	Miles.
Common sewers and surface drains built previous to January 1, 1946	1,223 52
Common sewers and surface drains built between January 1 and December 31, 1946	3 52
Total length of common sewers and surface drains built to December 31, 1946	1,227 04
Total length of city intercepting sewers connecting with Metropolitan sewers to December 31, 1946	*6 81
Total length of Boston main drainage intercepting sewers to December 31, 1946	*24 12
Grand total of common and intercepting sewers to December 31, 1946	1,257 97
Total mileage of streets containing sewerage works to January 1, 1947	688 94

* No additional lengths built during 1946.

Catch-Basins in Charge of Sewer Division.

DISTRICTS.	CATCH-BASINS FOR TWELVE MONTHS ENDING DECEMBER 31, 1946.			TOTAL FOR WHOLE CITY IN CHARGE OF SEWER DIVISION.	
	Number Built or Rebuilt.	Number Abandoned or Removed.	Net Increase.	Previous Report to January 1, 1946.	Grand Total to January 1, 1947.
City Proper.....	0	0	0	3,628	3,628
Roxbury.....	14	41	—27	3,394	3,367
South Boston.....	1	0	1	1,457	1,458
East Boston.....	0	0	0	1,106	1,106
Charlestown.....	0	0	0	841	841
Brighton.....	3	0	3	1,988	1,991
West Roxbury.....	26	3	23	3,945	3,968
Dorchester.....	46	4	42	5,349	5,391
Hyde Park.....	17	4	13	926	939
Totals.....	107	52	55	22,634	22,680

Sewage Statistics for Year 1946, Calf Pasture Pumping Station.

MONTH.	Total Gallons Pumped.	Average Gallons Pumped Daily.	Maximum Gallons Pumped Daily.	Minimum Gallons Pumped Daily.	Average Lift. (Feet.)
January.....	3,431,397,000	110,690,226	163,488,000	99,850,000	39.5
February.....	2,927,554,000	104,555,500	179,700,000	91,137,000	39.5
March.....	3,307,832,000	106,704,258	161,726,000	81,535,000	39.5
April.....	3,002,832,000	100,094,400	159,130,000	75,062,000	39.5
May.....	3,438,302,000	110,912,997	187,688,000	93,925,000	39.5
June.....	3,316,829,000	110,567,633	153,375,000	80,575,000	39.5
July.....	3,135,945,000	101,159,516	133,525,000	90,325,000	39.5
August.....	3,749,993,000	120,967,516	172,376,000	95,225,000	39.5
September.....	2,997,143,000	99,704,767	142,937,000	94,469,000	39.5
October.....	2,990,661,000	96,666,484	133,750,000	83,012,000	39.5
November.....	2,775,855,000	92,328,500	117,300,000	81,850,000	39.5
December.....	2,976,780,000	92,799,355	204,075,000	79,062,000	39.5
Totals.....	38,050,123,000	1,247,351,152			
Averages.....	104,246,994	103,945,929			

Total Running Time of Pumps.— Number 1, 2,037 hours, 20 minutes; Number 2, 2,958 hours, 50 minutes; Number 3, 4,887 hours, 10 minutes; Number 4, 5,007 hours, 25 minutes; Number 5, 2,265 hours, 5 minutes; Number 6, 8,216 hours, 5 minutes.

Fuel Record for Year 1946, Calf Pasture Pumping Station.

MONTH.	FUEL OILS.		Amount.
	Gallons Used.	Gallons Received.	
January.....	29,900	33,345	\$1,480 18
February.....	26,412	26,136	1,160 17
March.....	24,612	18,097	803 32
April.....	24,389	16,663	739 67
May.....	23,187	23,495	1,042 94
June.....	19,847	17,500	* 776 82
July.....	21,529	28,191	1,251 40
August.....	23,733	25,843	1,147 17
September.....	17,807	18,777	833 51
October.....	28,709	28,045	1,244 92
November.....	21,867	15,878	704 82
December.....	27,320	29,079	1,290 81
Totals.....	289,402	281,049	\$12,475 73

* .04439 gallons.

Cost of Pumping for Year 1946, Calf Pasture Pumping Station.

ITEMS.	Total.	Cost Per Million Feet, Gallons.
Labor.....	\$65,395 19	\$0.04351
Edison power.....	70,077 09	.04663
Fuel oil.....	12,475 73	.00830
Packing.....	261 17	.00017
Miscellaneous renewals and supplies.....	4,160 26	.00277
Oils and waste.....	401 47	.00027
Totals.....	\$152,770 91	\$0.10165
Labor at Screens.....	\$11,194 71	\$0.00745

Sewage Pumped, Calf Pasture Pumping Station.

From Pumping Records.

Total gallons pumped	38,050,123,000
Daily average gallons pumped	104,246,000
Average dynamic head (feet)	39.5
Total foot gallons	1,502,979,858
Total foot pounds	12,657,438,317,286

Electric Current Used for 1946, Calf Pasture Pumping Station.

MONTH.	Kilowatt Hours. Inside Meters.	Kilowatt Hours. Outside Meters.	Amount.
January.....	535,399	578,980	\$6,200 42
February.....	453,000	544,160	5,976 21
March.....	495,600	530,960	5,717 64
April.....	454,400	477,840	5,432 95
May.....	530,700	492,140	5,560 56
June.....	499,000	601,460	6,504 96
July.....	478,100	494,000	5,645 90
August.....	573,200	575,700	6,226 79
September.....	448,700	528,000	6,091 16
October.....	451,400	464,540	5,587 72
November.....	411,900	483,240	5,564 86
December.....	442,200	470,400	5,567 92
Totals.....	5,773,500	6,241,420	\$70,077 09

**Amount of Refuse Removed from Filth Hoist for Year 1946,
Calf Pasture Pumping Station.**

MONTH.	Wheelbarrow Loads.	Weight.*
January.....	131	12,445
February.....	124	11,780
March.....	131	12,445
April.....	137	13,015
May.....	138	13,110
June.....	141	13,395
July.....	149	14,155
August.....	145	13,775
September.....	147	13,965
October.....	154	14,630
November.....	166	15,770
December.....	143	13,585
Totals.....	1,706	162,070 lbs. 81 $\frac{70}{2000}$ tons.

* Refuse removed from filth hoist, average 95 pounds to barrow.

Financial Statement from January 1, 1946, to December 31, 1946.

	Balance on Hand, January 1, 1946.	Appropriations and Revenue, 1946.	Transfers from Debit of.	Transfers to Debit of.	Total Credits, December 31, 1946.	Total Expendi- tures, 1946.	Unexpended.
Sewer Service.....	.....	\$525,129 86	\$626 25	.....	\$525,129 86	\$515,283 24	\$9,846 62
Sewerage Works, Non-Revenue.....	\$806,349 38	.....	.....	\$626 25	806,349 38	304,365 44	501,983 94
Sewerage Works, Revenue.....	3,020 54	149,000 00	.....	.....	162,020 54	119,519 70	32,500 84

Sewerage Works, January 1 to December 31, 1946.

LOCATION.	Begun.	Finished.	Built by.	Length in Feet.	Character.	Amount Expended in 1946.
EAST BOSTON.						
Decatur street, overflow in private land, from Border street to 210 feet westerly.	Sept. 22, 1945	Dec. 19, 1945	H. DiTullio Company.....	.....	Final payment, 1 manhole built.	\$3,125 63
Lubec Street outlet, from Cottage street and Prescott street, remove deposit from outlet.	Nov. 18, 1946	Not completed.	C & R Construction Company.	402.00 220.00	6' 9" conduit cleaned..... 5' 6" conduit cleaned.	6,096 01
CHARLESTOWN.						
Spice street, from Cambridge street to end.	Aug. 31, 1944	Oct. 5, 1944	Angelo Grande.....	.....	Engineering and charges for iron frames and covers.	380 66
BRIGHTON.						
Reedsdale street, Kilsyth road, and Union street, Brighton; Spring Park avenue and Washington street, West Roxbury; Pond street, Dorchester; Homer street and Saratoga street, East Boston; Hyde Park avenue at DeStefano road, Hyde Park.	Nov. 18, 1946	Dec. 20, 1946	Charles Struzziery Company.....	.....	Engineering inspection and charges for iron frames and covers, etc.	705 49
WEST ROXBURY.						
Centre street, at St. Theresa avenue.	Oct. 18, 1945	Nov. 23, 1945	M. DeMatteo Contracting Company.	.....	Engineering charge.....	33 24
Moville street, from Webster street to Springstreet.	Oct. 17, 1945	Oct. 31, 1945	H. DiTullio Company.....	.....	Final payment, and iron frames, and covers.	697 08
Pond street, from Woodland road to Brookline line.	Aug. 8, 1945	Nov. 5, 1945	C. Russo, Incorporated.....	.....	Final payment.....	1,473 20
Dwinell street, from Addington road to Corey street.	June 4, 1945	July 28, 1945	Charles Struzziery Company.....	.....	Final payment, and charges for iron frames and covers.	674 44

May street, West Roxbury, and North-bourne road, West Roxbury. Nonantum street, Brighton; Columbia road, South Boston; and Public Alley No. 103, City Proper.	June 25, 1945	Aug.	J. D'Amico.....	Final payment, and iron frames, and covers.	137 01
Private land, from Keystone street to Joyce Kilmer road.	March 20, 1946	March 26, 1946	Baker & Co.....	Wooden box drain removed.....	2,363 30
Bardley road, Berwick street, Durant street, Hazelnere road, West Roxbury, and Saco street, Dorchester, and in Owen street, from Tiverton road to Morton street, and outlet in Tiverton road from Stow road to Owen street, Dorchester, outlets for catch-basins in River street, northeast corner of Mill Pond, Hyde Park, and Higgins street, Brighton.	June 28, 1945	Aug.	Baker & Co.....	Final payment.....	1,233 74
Hackensack road, from Lucia road to Brook-line line and outlet in Payson road, and in Neillan Crescent (southwest arm), West Roxbury.	April 29, 1946	June 1, 1946	Edward M. Matz.....	10" sanitary sewer..... 15"-12" surface drain. Minor drain. 8 manholes. 1 catch-basin.	7,152 72
Whitcomb avenue from Centre street to Arborview road.	May 7, 1946	June 20, 1946	Baker & Co.....	10" sanitary sewer..... 15"-10" surface drain. Minor drain. 7 manholes. 8 catch-basins. 14 drop inlets.	13,189 99
Boylston place and Myles Standish road, West Roxbury, Pleasant Hill avenue, Dorchester, Birchcroft road, and Gwinnett street, Hyde Park.	June 3, 1946	Aug.	J. D'Amico.....	Minor drain..... 2 manholes. 21 catch-basins. 1 drop inlet.	9,680 63
Andover road, from Buchanan road to Wald street, West Roxbury, and Brook Farm road, from La Grange street to 900 feet southwesterly.	Aug. 15, 1946	Oct.	J. D'Amico.....	10" sanitary sewer..... 10" surface drain. 7 manholes. Minor drain.	7,011 70
Zeller street, Glenhaven road, Brook street, Spalding Street outlet, Neponset avenue, and Bourne street.	Oct. 17, 1946	Dec. 11, 1946	C. Russo, Inc.....	2' 3" conduit..... 18" surface drain. 12"-10" surface drain. Minor drain. 10" sanitary sewer. 7 manholes. 2 catch-basins.	6,305 58

Sewerage Works, January 1, to December 31, 1946.—Continued.

LOCATION.	Begun.	Finished.	Built by.	Length in Feet.	Character.	Amount Expended in 1946.
Metropolitan avenue, between Kittredge street and Poplar street.	Oct. 7, 1946	Nov. 19, 1946	Baker & Co.....	2,588.65 299.00	10'-12"-15" pipe, surface drain... Minor drain, 12 manholes, 3 catch-basins, 1 drop inlet.	\$12,619 48
Stony Brook (Sec 16) from 20 feet south of Stella road to Hyde Park line.	Nov. 12, 1946	Not completed.	C. & R. Construction Co....	200.00	12' 0" by 10' 0" reinforced concrete conduit.	2,234 94
Ledgeale road, Truman road, and Alward road.	Dec. 24, 1946	Not completed.	C. Russo, Inc.....	.....	Inspection only.....	72 03
Pershing road, from 100 feet westerly of Centre street to 440 feet westerly of Centre street.	Jan. 8, 1935	March 28, 1936	Rosindale Construction Company, Inc.	.....	175.61 square yards asphalt pavement, done by Central Construction Company.	957 07
DORCHESTER.						
Moon Island, construction of electric power line.	Nov. 7, 1945	Jan. 5, 1946	Anderson Coffey Company, Inc.	.....	Constructing overhead power line from Squantum to Moon Island.	3,202 83
Private land, from 30 feet northwesterly of Dillingham street 120 feet northwesterly.	Dec. 4, 1945	Dec. 12, 1945	John Williams.....	.....	Engineering and inspection only in 1946.	1,369 52
Private land, from Sydney street to Tuttle street, Tuttle street from 420 feet south of Hartland street to 100 feet southerly, and catch-basin in Hartland street.	Dec. 13, 1945	April 4, 1946	J. D'Amico.....	89.15 47.05 61.00	24" pipe, surface drain..... 12" pipe, surface drain. Minor drain. 3 manholes, 2 catch-basins, Installing new switchets and busses.	3,450 58
Calf Pasture Pumping Station, installing switchets and busses.	Jan. 7, 1946	Nov. 8, 1946	Kenworthy & Taylor, Inc....	.....		1,850 45
Moon Island, repairing embankment and sea wall of Moon Island Causeway, Quincy.	June 6, 1946	July 18, 1946	Bradford Weston, Inc.....	268.00	268 linear feet embankment and sea wall.	8,083 32
Tenean Creek, Victory road and Freepoint street, Tenean street, and Old Colony Parkway.	Oct. 2, 1946	Not completed.	John Deveney Company.....	870.00	12" pipe, sewer..... 3 manholes.	15,459 81

Alsen Playground, furnish and lay water works, sewerage works and paving for veterans, temporary housing project.	Sept. 30, 1946	Oct. 15, 1946	Chas. A. Mogavero.	1,443.00 1,310.00	10" pipe, sewer. Minor drain. 12 catch-basins, 9 manholes.	1,334 60
Franklin Field, furnish and lay sewerage works, water works, paving and other works in veterans, temporary housing development.	Sept. 9, 1946	Oct. 31, 1946	Baker & Co.	3,020.00 2,565.00	10" pipe, sewer. Minor drain. 21 catch-basins, 14 manholes.	1,251 88
Sewage Treatment Plant, Engineering service.			Charles A. Maguire and Associates.		Engineering services.	42,000 00
HYDE PARK.						
Austin street, from 45 feet south of Marston street to 930 feet northerly.	Jan. 2, 1945	April 7, 1945	Baker & Co.		Engineering and inspection.	132 07
Private land and Summer street, from New York, New Haven and Hartford Railroad to West street.	July 26, 1945	Nov. 7, 1945	Horace DiTullio Company.		Final payment.	601 40
Greenwood avenue, Birchcroft and Laurel roads, Reservoir street, and Rosewood road.	Aug. 12, 1946	Oct. 5, 1946	Charles Struzziery Company.	666.94 678.04 6.00	10" pipe, sewer. 12" pipe, surface drain. Minor drain. 5 manholes.	7,470 66
West street, between Gwinnett street and Austin street, Austin street at Myopia road, and Myopia road in private land, from Stony Brook to West street about 90 feet northwest of Myopia road.	Sept. 16, 1946	Nov. 25, 1946	F. Susi and DeSantos Company.	294.00 253.75 449.15 33.00	36" reinforced concrete pipe culvert, 36" reinforced concrete pipe, surface drain. 42" reinforced concrete pipe, surface drain. Minor drain. 5 manholes. 2 catch-basins. 12-12" pipe, surface drain abandoned. 34-15" pipe, surface drain abandoned.	19,768 34
Pontiac street, between Tremont street and Alleghany street; Humboldt avenue between Ruthven and Seaver streets, and South Huntington avenue at Heath street.	March 11, 1946	May 17, 1946	J. D'Amico.	70.00 115.00	12" pipe, sewer. 10" catch-basin drain. 2 manholes, 5 catch-basins, 3 drop inlets.	5,898 71
ROXBURY.						

Sewerage Works, January 1 to December 31, 1946.—Continued.

LOCATION.	Begun.	Finished.	Built by.	Length in Feet.	Character.	Amount Expended in 1946.
Edgerly road, from Norway street to Burbank street	April 23, 1945	May 24, 1945	Martin J. Kelly Company, Inc.	.....	Iron frames and covers.....	\$21 45
Van Ness street, from Jersey street to Ipswich street (Paving Service contract).	March 7, 1946	April 18, 1946	Baker & Co.....	68.00	10" catch-basin drain..... 4 catch-basins.	1,918 59
Alleys Nos. 918, 919, from Newbury street to Alley No. 917.	July 12, 1946	Aug. 9, 1946	F. Susi and DeSantos Company.	100.00 218.40 24 00	18" surface drain..... 15" surface drain..... 10" catch-basin drain. 2 manholes.	2,183 62
Columbus avenue, from Northampton street to Station street. (Paving Service and Sewer Works contract).	July 17, 1946	Sept. 12, 1946	John Devency Company....	200.00	10" minor drain 5 catch-basins. 36 drop inlets. 37 catch-basins changed to manholes. 7 manholes rebuilt.	9,709 48
CITY PROPER.						
Appleton street, from Clarendon street to Berkeley street.	Dec. 3, 1945	March 26, 1946	R. A. Buccella & Sons.....	192.30 116.00 111.29	12" pipe, sewer relaid Minor drain. Square yards bituminous concrete surface.	2,655 10
Ordway place, from Washington street to Province court.	Aug. 14, 1945	Sept. 8, 1945	Martin J. Kelly Company, Inc.	.....	Final payment.....	113 14
Milk street, from Arch street to Hawley street.	May 28, 1946	July 26, 1946	J. A. Singarella Company....	.....	Final payment.....	4,673 79

CONSTRUCTION REPORT, 1946.
Sewerage Works, 1946.

PUBLIC WORKS DEPARTMENT.

65

ACCOUNTS.	Totals.	Labor.	Compressors, Pumps and Trucks.	Tools and Materials.	Contractors.	Sundries.
Engineers' and office salaries.....	\$103,692 25	\$103,692 25		\$4,610 25	\$264 00	\$1,254 71
Engineers' and office expense.....	14,010 44	2,536 43	\$5,345 05	38 37		
Miscellaneous.....	2,446 54	2,340 67	67 50			
Emergency Compensation Allotment.....	5,830 67	5,830 67				
New manholes, entire city.....	2,058 29	1,337 24	90 00	309 50	321 55	
New catch-basins, South Boston.....	2,199 63	1,279 19	71 25	177 19	672 00	
New catch-basins, East Boston.....	600 69	546 63	6 00	48 06		
New catch-basins, Charlestown.....	402 29	307 84	28 50	65 95		
New catch-basins, Brighton.....	146 68	60 27	75	85 66		
New catch-basins, West Roxbury.....	1,925 26	62 15	6 00	238 24	1,618 87	
New catch-basins, Dorchester.....	1,399 70	909 26	57 00	433 44		
New catch-basins, Roxbury.....	6,609 21	5,605 15	416 25	587 81		
New catch-basins, City Proper.....	2,079 62	1,459 80	104 25	515 57		
Repair streets.....	243 18	.....	.....	.....	243 18	
Release sewers.....	67 25	67 25				
Stock.....	10,962 95	.....	.....	10,962 95		
Testing laboratory.....	8,029 78	7,518 25	157 00	354 53		
Holiday, etc.....	16,152 28	16,152 28				
Unadvertised jobs.....	5,419 75	1,087 77	.....	281 07	4,037 91	13 00
Total miscellaneous.....	\$184,276 46	\$150,793 10	\$6,349 55	\$18,708 59	\$7,157 51	\$1,267 71
Sewers built, entire city.....	209,294 28	23,823 06	175 00	9,427 94	174,083 88	1,784 40
Totals.....	\$393,570 74	\$174,616 16	\$6,524 55	\$28,136 53	\$181,241 39	\$3,052 11

**CONSTRUCTION REPORT, 1946.
Sewerage Works, 1946.—Concluded.**

ACCOUNTS.	Totals.	Labor.	Compressors, Pumps and Trucks.	Tools and Materials.	Contractors.	Sundries.
CREDITS.						
Cost of maintenance stock used on construction.....	\$1,593 06					
Cost of construction stock used on construction.....	10,790 74					
Cost of trucks stock used on construction.....	847 50					
Cost of construction pay rolls paid by maintenance.....	1,133 87					
Cost of materials paid by maintenance.....	6 48	\$1,133 87	\$847 50	\$12,390 28		
Totals.....	\$379,199 09	\$173,482 29	\$5,677 05	\$15,746 25	\$181,241 39	\$3,052 11
DEBITS.						
Maintenance pay rolls paid by construction.....	\$35,966 97					
Maintenance materials paid by construction.....	8,092 83					
Debit transfers from maintenance (trucks).....	626 25	35,966 97	626 25	8,092 83		
Totals.....	\$423,885 14	\$209,449 26	\$6,303 30	\$23,839 08	\$181,241 39	\$3,052 11

MAINTENANCE EXPENDITURES FROM JANUARY 1, 1946, TO DECEMBER 31, 1946.

SEWER DIVISION.

Improved Sewerage.

Pumping Station, Calf Pasture, inside . . .	\$100,857	61
Pumping Station, Calf Pasture, outside . . .	2,334	20
Pumping Station, Calf Pasture, engines . . .	29,071	90
Pumping Station, Calf Pasture, boilers . . .	24,965	93
Pumping Station, Union Park Street . . .	10,708	67
Pumping Station, Summer Street . . .	3,775	14
Moon Island . . .	26,141	53
Main and intercepting sewers . . .	22,013	59
Clean deposit sewer at Calf Pasture Pump- ing Station . . .	16,053	31
Repair roof at Calf Pasture Pumping Station . . .	2,367	38
Moon Island Road (Reconstruction of) from Dorchester Street, Quincy to Moon Island . . .	11,878	41
		<hr/>
	\$250,167	67

Maintenance — Regular.

Automobiles . . .	\$15,365	67
Cleaning catch-basins . . .	75,644	46
Cleaning sewers . . .	43,129	32
Fuel and oil . . .	1,290	83
Hardware and tools . . .	4,990	05
House connections . . .	19,629	68
Maintenance, Stony Brook . . .	2,066	33
Office and engineers' expense . . .	3,323	78
Office and engineers' salaries . . .	37,315	82
Stock . . .	1,893	01
Yard and locker . . .	37,220	87
		<hr/>
	241,869	82

\$492,037 49

Maintenance — Repairs.

Repair streets . . .	\$4,175	22
Repair department buildings . . .	181	38
Repair catch-basins, South Boston . . .	789	95
Repair catch-basins, East Boston . . .	432	13
Repair catch-basins, Charlestown . . .	551	23
Repair catch-basins, Brighton . . .	793	57
Repair catch-basins, West Roxbury . . .	878	50
Repair catch-basins, Dorchester . . .	3,909	15
Repair catch-basins, Hyde Park . . .	552	45
Repair catch-basins, Roxbury . . .	949	14
Repair catch-basins, City Proper . . .	1,308	90
Repair sewers, South Boston . . .	41	17
Repair sewers, East Boston . . .	73	80
Repair sewers, Charlestown . . .	318	46
Repair sewers, Brighton . . .	1,241	58
Repair sewers, West Roxbury . . .	3,325	21
Repair sewers, Dorchester . . .	2,525	44
Repair sewers, Hyde Park . . .	800	23
Repair sewers, Roxbury . . .	940	18
Repair sewers, City Proper . . .	3,837	19
		<hr/>
	27,624	88

Carried forward . . . \$519,662 37

<i>Maintenance — Miscellaneous.</i>		
<i>Brought forward</i>		\$519,662 37
Miscellaneous	\$5,538 67	
Back Bay Fens	270 12	
Telephones	1,116 45	
Wearing apparel (rubber goods)	702 32	
Pensions and annuities	6,058 21	
Holiday, vacation, time allowed, etc.	49,610 98	
		63,296 75
Total		\$582,959 12

CREDITS.

Cost of trucks, cleaning machines used on jobs	\$20,535 38	
Cost of maintenance stock used on jobs	1,314 37	
Cost of construction stock used on job	2,280 43	
Cost of maintenance materials paid by sewerage works	7,679 80	
Cost of maintenance pay rolls paid by sewerage works	36,380 00	
Debit transfer to sewerage works for trucks, November 18, 1946	626 25	
	\$68,816 23	
		68,816 23
		\$514,142 89

DEBITS.

Sewerage works pay rolls paid by maintenance	\$1,133 87	
Sewerage works materials paid by maintenance	6 48	
	\$1,140 35	
		\$1,140 35
Total expenditures		<u>\$515,283 24</u>

ACCOUNTS.	Totals.	Labor.	Repairs.	Motor Vehicles, Cleaning Machines, Etc.	Taxes.	Contractors.	Light, Fuel, Power.	Materials and Supplies.	Equipment, Tools.	Miscellaneous.
Automobiles.....	\$15,365 67	\$126 50	\$9,309 98				\$89 77	\$235 23	\$1,299 39	Alcohol, antifreeze, etc..... \$433 90 Gas, oil, etc..... 3,510 90 Fees..... 68 00 Storage..... 283 00 Sundries..... 9 00 Advertising..... 45 50
Cleaning catch-basins..	75,044 46	42,190 39		\$10,148 63		\$23,164 63		95 31		
Cleaning sewers.....	43,129 32	39,410 55		3,673 90				44 87		
Fuel and oil.....	1,290 83						1,290 83			
Hardware and tools....	4,990 05	105 32								
House connections.....	19,629 68	19,429 09	78 75	5 00					2,202 59	New cars..... 2,680 29 Express charge..... 1 85
Maintenance, Stony Brook.....	2,066 33	1,731 05		244 00				46 92		Repaing..... 69 92
Office and engineers' expense.....	3,323 78	2,318 58	33 25					91 28		
Office and engineers' salaries.....	37,315 82	37,315 82						3 00	39 34	Printing..... 220 73 Stationery..... 661 38 Postage..... 47 50
Stock.....	1,893 01							1,893 01		
Yard and locker.....	37,220 87	36,481 17	61 30	170 37			225 74	230 04		Sundries..... 52 25
Miscellaneous.....	5,538 67	2,623 95		805 00						Transport..... 1,116 55 Meals..... 26 00 Telephone calls..... 279 55 Postage..... 5 33 Unliquidated reserve 682 29
<i>Carried forward...</i>	\$247,408 49	\$181,732 42	\$9,483 28	\$15,046 90		\$23,164 63	\$1,606 34	\$2,639 66	\$3,541 32	\$10,193 94

Sewer Division — Maintenance Expenditures, Details, 1946.— Concluded.

ACCOUNTS.	Totals.	Labor.	Repairs.	Motor Vehicles, Cleaning Machines, Etc.	Taxes.	Contractors.	Light, Fuel, Power.	Materials and Supplies.	Equipment, Tools.	Miscellaneous.
Construction stock used on maintenance.... \$2,280 43										
Materials paid for by construction..... 7,679 80										
Pay rolls paid by construction.. 36,380 00										
Debit transferred to trucks, construction..... 626 25	\$68,816 23	\$36,585 35	\$10,678 20	\$626 25			\$205 35	\$4,211 19	\$9,733 34	\$6,776 55
Totals.....	\$514,142 89	\$343,037 55	\$338 99	\$19,846 00	\$345 00	\$53,766 12	\$88,450 59	\$2,617 84	\$301 66	\$5,439 14
DEBITS.										
Sewerage works pay rolls paid by maintenance..... \$1,133 87										
Sewerage works materials paid for by maintenance... 6 48	\$1,140 35	\$1,133 87						\$6 48		
Total maintenance expenditures, December 31, 1946.	\$515,283 24	\$344,171 42	\$338 99	\$19,846 00	\$345 00	\$53,766 12	\$88,450 59	\$2,624 32	\$301 66	\$5,439 14

Sewer Division — Maintenance Expenditures, Details, 1946.

ACCOUNTS.	Totals.	Labor.	Contractors.	Trucks.	Repairs.	Light, Heat and Power.	Grease, Oil and Gasoline.	Tools and Equipment.	Taxes.	Miscellaneous.
Pumping Stations:										
Calf Pasture, inside.....	\$100,857 61	\$28,914 67	.....	.....	\$175 97	\$70,077 09	\$27 33	\$1,601 16	.....	\$61 39
Calf Pasture, outside.....	2,334 20	2,022 25	.....	\$90 00	.....	.....	.....	221 95	.....	.....
Calf Pasture, engines.....	29,071 90	25,977 92	.....	.....	1,225 40	.....	324 59	1,524 99	.....	19 00
Calf Pasture, boilers.....	24,965 93	11,566 95	.....	.....	.....	12,477 10	18 66	902 33	.....	89
Union Park Street.....	10,708 67	8,572 27	.....	3 25	16 06	1,974 13	.....	110 86	.....	32 10
Summer Street.....	3,775 14	1,985 89	.....	.....	31 27	1,697 98	.....	60 00	.....	.....
Moon Island.....	26,141 53	23,430 15	.....	70 50	40 90	606 79	415 88	1,202 31	\$345 00	30 00
Main and intercepting sewers.....	22,013 59	19,125 94	.....	1,854 25	44 31	103 41	.....	870 08	.....	15 60
Totals.....	\$219,868 57	\$121,596 04	.....	\$2,018 00	\$1,533 91	\$86,936 50	\$786 46	\$6,493 68	\$345 00	\$158 98
Maintenance Contracts:										
Clean deposit sewer at Calf Pasture Pumping Station, started June, 28, 1946; finished August 28, 1946; Contractor R. Zoppo.	16,053 31	483 31	\$15,570 00	.....	.....	.....	.....	.....	.....	.....
Roof repaired, Calf Pasture Pumping Station, started August 12, 1946; finished October 11, 1946; Contractor John F. Shea.	2,307 38	60 28	2,288 10	.....	.....	.....	.....	.....	.....	19 00
Reconstruction of Moon Island Road from Dorchester Street, Quincy to Moon Island, started November 3, 1946; finished November 28, 1946; Contractor Dooley Brothers, Inc.	11,878 41	712 11	11,141 30	.....	.....	.....	.....	.....	.....	25 00
Totals.....	\$250,167 67	\$122,851 74	\$28,999 40	\$2,018 00	\$1,533 91	\$86,936 50	\$786 46	\$6,493 68	\$345 00	\$202 98

Recapitulation, Maintenance, Detail, 1946.

ACCOUNTS.	Totals.		
	Improved Sewerage.	Outside Improved Sewerage.	Totals.
Labor.....	\$122,851 74	\$256,771 16	\$379,622 90
Repairs.....	1,533 91	9,483 28	11,017 19
Trucks, motor vehicles, etc.....	2,018 00	18,454 25	20,472 25
Taxes.....	345 00	.....	345 00
Contractors.....	28,999 40	24,706 72	53,706 12
Light, heat and power.....	86,936 50	1,719 44	88,655 94
Materials and supplies.....	.....	6,042 57	6,042 57
Equipment and tools.....	6,493 68	3,541 32	10,035 00
Gasoline.....	.....	3,510 90	3,510 90
Grease, oil, antifreeze, etc.....	786 46	433 90	1,220 36
Fees.....	.....	68 00	68 00
Storage.....	.....	283 00	283 00
New cars.....	.....	2,680 29	2,680 29
Printing.....	.....	220 73	220 73
Stationery.....	.....	661 38	661 38
Postage.....	.....	52 83	52 83
Carfaxes.....	.....	1,116 55	1,116 55
Meals.....	.....	26 00	26 00
Telephone calls.....	.....	279 55	279 55
Unliquidated reserve.....	.....	682 29	682 29
Telephone service.....	.....	1,116 45	1,116 45
Wearing apparel.....	.....	702 32	702 32
Sundries.....	202 98	178 52	381 50
Totals.....	\$250,167 67	\$332,791 45	\$582,959 12
CREDITS.			
	Improved Sewers.	Outside Improved Sewers.	
Trucks, cleaning machines, etc., used on jobs.....	\$2,018 00	\$18,517 38	
Maintenance stock used on jobs.....	103 40	1,210 97	
Construction stock used on jobs.....	.....	2,280 43	
Materials paid for by sewerage works.....	4,007 74	3,672 06	
Pay rolls paid for by sewerage works.....	5,782 80	30,597 20	
Debit transferred to sewerage works (trucks).....	.....	626 25	
Totals.....	\$11,911 94	\$56,904 29	
DEBITS.			
Sewerage works pay rolls paid by maintenance.....	.....	1,133 87	
Sewerage works materials paid by maintenance.....	.....	6 48	
Totals.....	.....	.....
	\$238,255 73	\$277,027 51	\$515,283 24

APPENDIX E.

REPORT OF THE DIVISION ENGINEER OF
THE WATER DIVISION.

BOSTON, January 2, 1947.

To the Commissioner of Public Works.

DEAR SIR,—I respectfully submit the following report of the activities, operations and expenditures of the Water Division for the year ending December 31, 1946.

In order to cooperate with the United States Government in the conservation of critical material, the work of laying and relaying water mains has been severely curtailed so that but very little work of this nature was performed during the year.

A total of 15,540 linear feet of pipe were either laid or relaid, varying in sizes from 3-inch to 16-inch, inclusive, as follows:

	LAI Linear Feet	RELAID Linear Feet
City Proper	140	225
South Boston	140	205
Dorchester	5,090	6,110
Brighton	217	—
West Roxbury	1,336	1,170
Hyde Park	527	380
Total	7,450	8,090

The particular streets in which the above work was performed are shown on the accompanying tables.

DISTRIBUTION BRANCH.

Due to the decrease in personnel, and the difficulty of replacing employees during the war, the department has engaged the services of contractors to assist the departmental forces in the City Proper, Dorchester, and West Roxbury districts.

The regular work of this branch, consisting of installation of new services and fire pipes, repairing of leaks, caring for complaints, shutting off and letting on water, freeing of stoppages in pipes, etc., was per-

formed in such a manner and at such periods as to cause minimum delay and inconvenience to applicants for water, water takers and the general public.

The machine shop and plumbing shop were forced to handle all the drilling and connecting of services in addition to the regular work carried on in these shops, such as the machining and assembling of gates, valves, and hydrants, and the department assisted the other branches of the Public Works Department in performing special jobs.

BUSINESS OFFICE.

The campaign inaugurated in 1938 to enforce the payment of outstanding water bills is still in force. Customers in arrears are notified that the flow of water will be reduced, but yet enough water is left on the premises to provide a minimum for health and sanitary requirements. As a result of this campaign the Water Division ended the year 1946 with a surplus of \$2,474,292.38, this surplus being due mainly to the collection of bills past due, and a decrease in the Metropolitan assessment for the year 1946.

Main pipe petitions received	13
Domestic service applications	314
Fire pipe applications	49
Special meter tests	266
Hydrant permits issued	18
Repair deposits received	110
Miscellaneous deposits	28

APPROPRIATIONS, EXPENDITURES AND REVENUE.

Amount appropriated	\$1,590,623 32
Amount expended	1,413,166 95

Balance	\$177,456 37
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Amount of money collected during the year	\$5,692,295 21
Amount expended from all sources	3,218,002 93

The Metropolitan Assessment for 1946 amounted to \$1,615,872.84, a decrease of \$1,063,292.48 over the assessment for 1930.

Total amount billed in 1946	\$5,230,189 75
Total amount collected for 1946 bills, as of December 31, 1946	4,467,603 49
Total amount abated for 1946 bills, as of December 31, 1946	45,767 50
Total amount collected in 1946 on bills rendered prior to 1946	897,013 04

This department contacts the water consumers very frequently throughout the year, and the conduct of the office has been such that I believe a spirit of good will between the customers and the employees has been brought about which is beneficial to the consumer and the City.

The issuance of statements of outstanding water bills to the consumers has been continued. The appreciation of the customers is shown by the fact that the number of liens placed on premises this year has been reduced.

Respectfully submitted,

D. M. SULLIVAN,
Division Engineer.

Table No. 1. Statement of Work Done During the Year 1946.

MAKE.	Applied.	Discontinued.	METERS CHANGED.		Tested in Shop.	Repaired in Service.	Repaired in Shop.	Resets.	Salvage.
			Out.	In.					
Hersey Disc.....	143	93	1,965	2,643	4,608	672	2,936	314	68
Hersey Detector.....	1	.....	1	1	2	24	.....	.....	.....
Hersey Compound....	3	.....	4	5	9	1	.....	.....	.....
Hersey Rotary.....	.....	.....	.....	.....	.....	.....	.....	.....	3
Worthington Disc....	.....	9	221	1	222	14	.....	.....	186
Watch Dog.....	65	34	1,287	1,157	2,444	204	2,389	158	10
King.....	1	3	254	4	258	20	37	.....	213
Federal.....	1	.....	29	1	30	.....	5	.....	22
American.....	.....	4	27	.....	27	3	.....	.....	27
Lambert.....	.....	.....	4	.....	4	.....	2	.....	2
Crown.....	.....	1	6	.....	6	1	.....	.....	9
Trident.....	3	2	4	1	5	.....	4	.....	1
Arctic.....	1	.....	2	1	3	.....	4	.....	2
Nash.....	1	.....	8	1	9	1	.....	.....	.....
Keystone.....	.....	.....	3	.....	3	.....	1	.....	2
Totals.....	219	146	3,815	3,815	7,630	940	5,378	472	545

Table No. 2. Meters in Service December 31, 1946.

MAKE.	DIAMETER IN INCHES.											Total.
	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	2	3	4	6	8	10	12	
Hersey Disc.....	57,781	3,120	1,941	1,059	595	163	138	36	1	.....	.....	64,834
Hersey Detector.....	.....	.....	.....	.....	.....	9	52	62	34	24	9	190
Hersey Compound.....	.....	.....	.....	.....	5	66	65	27	.....	.....	.....	163
Hersey Rotary.....	47	55	32	29	.....	.....	.....	.....	.....	.....	.....	163
Worthington Disc.....	3,985	22	27	29	38	8	.....	.....	.....	.....	.....	4,109
Watch Dog.....	23,008	1,074	908	704	453	397	89	.....	.....	.....	.....	26,633
American.....	364	120	.....	.....	.....	.....	.....	.....	.....	.....	.....	484
King.....	1,703	108	.....	3	26	.....	.....	.....	.....	.....	.....	1,840
Federal.....	265	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	265
Crown.....	157	284	22	42	63	19	.....	.....	.....	.....	.....	587
Nash.....	77	30	18	10	.....	.....	.....	.....	.....	.....	.....	135
Lambert.....	62	13	20	.....	.....	.....	.....	.....	.....	.....	.....	95
Arctic.....	1	.....	.....	26	23	17	10	.....	.....	.....	.....	77
Keystone.....	24	11	1	.....	.....	.....	.....	.....	.....	.....	.....	36
Empire.....	23	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	25
Trident.....	36	2	2	11	11	21	12	1	1	1	.....	98
Totals.....	87,533	4,839	2,973	1,913	1,214	700	366	126	36	25	9	99,734

Table No. 3. Meters in Shop, December 31, 1946.

MAKE.	DIAMETER IN INCHES.										Total.
	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	2	3	4	6	8	10	
NEW.											
Hersey Disc.....	200					1					201
Hersey Compound.....						1	1				2
Totals.....	200					2	1				203
OLD.											
Hersey Disc.....	390	43	20	3	2	6					464
Hersey Detector.....							1	5	2		8
Watch Dog.....	560	40	115	2	2	3					722
Worthington Disc.....						2					2
Totals.....	950	83	135	5	4	11	1	5	2		1,196

Table No. 4. Meters Repaired and Rebuilt at Factory, 1946.

MAKE.	DIAMETER IN INCHES.			Total.
	$\frac{3}{8}$	$\frac{3}{4}$	1	
Hersey Disc.....	425	50	8	485

Table No. 4A. Meters Purchased New in 1946.

MAKE.	DIAMETER IN INCHES.								Total.
	$\frac{3}{8}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	2	3	4	8	
Hersey Disc.....	1,125	40	....	20	....	5	....	....	1,190
Hersey Compound.....	....	....	....	....	....	5	10	2	17
Totals.....	1,125	40	....	20	....	10	10	2	1,207

Table No. 5. Meters Reset.

MAKE.	DIAMETER IN INCHES.								Total.	Occupied.	Connection Pieces.
	$\frac{3}{8}$	$\frac{1}{4}$	1	$1\frac{1}{2}$	2	3	4	6			
Hersey Disc.....	276	19	10	2	6	....	1	....	314	85	229
Watch Dog.....	137	4	10	4	1	1	1	....	158	21	137
Totals.....	413	23	20	6	7	1	2	....	472	106	366

Table No. 6A. Meters Changed in 1946. Meters Taken Out.

MAKE.	DIAMETER IN INCHES.								Total.
	$\frac{5}{8}$	$\frac{3}{4}$	1	1 $\frac{1}{2}$	2	3	4	6	
Hersey Disc.....	1,686	147	80	39	9	2	2	.....	1,965
Hersey Detector.....								1	1
Hersey Compound.....						2	2	.....	4
Worthington Disc.....	219	1	.....	1	.....			.....	221
Watch Dog.....	1,112	58	65	32	13	7	.....	.....	1,287
King.....	237	2	2	8	5	.....		.....	254
Arctic.....	2	.....							2
Nash.....	3	1	1	3	.....				8
Lambert.....	3	.....	1	.....					4
Crown.....	2	2	.....	2	.....				6
Federal.....	28	.....		1	.....				29
American.....	20	7	.....						27
Trident.....	2	.....				1	1	.....	4
Keystone.....	1	1	1	.....					3
Totals.....	3,315	219	150	86	27	12	5	1	3,815

Table No. 6B. Meters Changed in Year 1946. Meters Put In.

MAKE.	DIAMETER IN INCHES.								Total.
	$\frac{5}{8}$	$\frac{3}{4}$	1	1 $\frac{1}{2}$	2	3	4	6	
Hersey Disc.....	2,297	180	87	46	26	4	3	.....	2,643
Hersey Detector.....								1	1
Hersey Compound.....						2	3	.....	5
Worthington Disc.....						1	.....		1
Watch Dog.....	980	58	67	37	10	4	1	.....	1,157
King.....		1	.....	3	.....				4
Arctic.....				1	.....				1
Nash.....				1	.....				1
Federal.....				1	.....				1
Trident.....						1	.....		1
Totals.....	3,277	239	154	89	36	12	7	1	3,815

Table No. 7. Cause of Meters Changed in Year 1946.

MAKE.	Department Test.	Do Not Register.	No Force.	Enlarged Meter.	Coupling Leak.	Clock Broken.	Spindle Leak.	Set Backwards.	Special Test.	Frost.	Total.
Hersey Disc.....	155	883	61	37	602	26	1	30	173	....	1,968
Hersey Detector... ..			1	....	....	....	....	....	....	....	1
Hersey Compound.. ..			4	....	....	....	....	....	....	....	4
Worthington Disc..	9	128	22	1	54	2	....	1	5	1	223
Watch Dog.....	43	678	20	3	323	66	110	6	43	1	1,293
King.....	5	137	2	....	95	2	11	....	5	1	258
Arctic.....	2	....	....	....	....	....	....	....	....	....	2
Nash.....		4	2	....	2	....	....	....	....	....	8
Lambert.....	1	2	....	....	1	....	....	....	....	....	4
Crown.....		4	....	....	1	....	....	....	....	....	5
Federal.....		5	2	....	16	....	6	....	....	....	29
American.....	2	15	....	....	5	3	....	....	....	....	25
Trident.....		3	1	....	....	....	....	....	....	....	4
Keystone.....		2	....	....	1	....	....	....	....	....	3
Totals.....	217	1,861	115	41	1,100	99	128	37	226	3	3,827

Table No. 8. Meters Applied in 1946.

MAKE.	DIAMETER IN INCHES.								Total.
	$\frac{3}{8}$	$\frac{1}{2}$	1	1½	2	3	4	6	
Hersey Disc.....	89	6	5	20	17	2	4	....	143
Hersey Detector.....						2	1	1	4
Federal.....				1					1
Nash.....				1					1
Watch Dog.....	33	1	5	12	11	1	2	....	65
Arctic.....				1					1
Trident.....						1	2	....	3
King.....				1					1
Totals.....	122	7	10	36	28	6	9	1	219

Meters applied on old service..... 31

Meters applied on new service..... 188

Total..... 219

Table No. 9. Meters Discontinued in 1946.

MAKE.	DIAMETER IN INCHES.									Permanently Discontinued.	Vacancies.	Connection Pieces.	Total.
	$\frac{3}{8}$	$\frac{1}{2}$	1	1½	2	3	4	6	8				
Hersey Disc.....	325	19	17	13	18	2	4	1	....	93	59	247	399
Hersey Detector.....									1	....	1	....	1
Worthington Disc.....	38									9	6	23	38
Watch Dog.....	145	11	7	16	17	4	2			34	22	146	202
American.....	5	1								4	....	2	6
Arctic.....					1							1	1
Federal.....	6											6	6
Crown.....	1				1					1	....	1	2
Trident.....						2				2	....		2
King.....	20	3		2						3	5	17	25
Totals.....	540	34	24	31	37	8	6	1	1	146	93	443	682

Table No. 10. Meters Repaired in Service in 1946.

MAKE.	Defaced and Broken Clocks.	Spindle Leaks.	Coupling Leaks.	New Train.	Broken Gears.	Examinations.	Repair Trains.	Total.
Hersey Disc.....	115	496	76	....	2	185	....	874
Worthington Disc.....	4	2	1	....	7	19	1	34
Watch Dog.....	46	134	27	....	....	103	....	310
King.....	....	19	4	....	....	87	....	110
American.....	1	2	....	....	....	4	....	7
Nash.....	....	1	....	....	....	15	....	16
Crown.....	....	1	....	....	....	12	....	13
Hersey Detector.....	25	....	....	1	....	....	....	26
Hersey Compound.....	1	....	....	....	....	....	....	1
Totals.....	192	655	108	1	9	425	1	1,391

Table No. 11. Meters Salvaged in 1946.

MAKE.	DIAMETER IN INCHES.					Total.
	$\frac{5}{8}$	$\frac{3}{4}$	1	$1\frac{1}{2}$	2	
Hersey Disc.....	64	3	1	....	....	68
Hersey Rotary.....	....	2	1	....	....	3
Watch Dog.....	9	....	....	1	....	10
King.....	199	5	3	5	1	213
Worthington Disc.....	186	....	....	....	....	186
Federal.....	22	....	....	....	....	22
American.....	25	2	....	....	....	27
Lambert.....	2	....	....	....	....	2
Crown.....	5	2	....	1	1	9
Nash.....	....	....	....	1	....	1
Keystone.....	....	1	1	....	....	2
Neptune.....	2	....	....	....	....	2
Totals.....	514	15	6	8	2	545

Table No. 1.

Showing Length of Water Pipes and Connections Owned and Operated by Public Works Department, Water Division, Water Service, and Number of Valves in Same, December 31, 1946.

	DIAMETER OF PIPE IN INCHES.															Total.	
	48	42	40	36	30	24	20	16	14	12	10	8	6	4	3		2
Length owned and operated, December 31, 1945 *	55,595	16,191	9,599	30,238	75,843	89,285	108,061	365,877	285	1,832,400	451,026	1,197,149	968,438	62,442	11,486	6,509	5,280,424
Gate valves in same.	26	4	5	31	50	75	71	762	14	5,184	1,578	4,460	3,155	546	19	18	15,998
Air valves in same.	60	5	10	35	113	84	53	101		64	1	5			1	14	546
Blow-offs in same.	11	5	6	11	33	37	52	76		166	40	203	141	66	10	5	862
Length laid and relaid during 1946 *								430		2,430		11,519			1,000		15,379
Gate valves in same.								2		11	2	26	1				42
Air valves in same.																1	1
Blow-offs in same.															2		2
Length abandoned during 1946 *								430		4		4	7,606				8,044
Gate valves in same.								1					12				13
Air valves in same.																1	1
Blow-offs in same.																3	3
Length owned and operated, December 31, 1946, including high pressure fire service*																	
Gate valves in same.	55,595	16,191	9,599	30,238	75,843	89,285	108,061	365,877	285	1,834,826	451,026	1,208,664	960,832	62,442	12,486	6,509	5,287,759
Air valves in same.	26	4	5	31	50	75	71	763	14	5,195	1,580	4,486	3,144	546	19	18	16,027
Blow-offs in same.	60	5	10	35	113	84	53	101		64	1	5			1	14	546
High pressure fire service.	11	5	6	11	33	37	52	76		166	40	203	141	66	9	5	861
							20,140	46,953		31,756							98,849

* Feet.
1,001,280 miles in system, including high pressure fire system.
18,721 miles in high pressure fire service.

Financial Transactions, Water Service, 1946.

Cash balance from 1945		\$1,473,054 57
Receipts:		
Water rates and services	\$5,638,552 78	
Tax titles — water	53,742 43	
		<u>5,692,295 21</u>
		\$7,165,349 78
Expenditures from revenue:		
Current expenses and extensions	\$1,413,166 95	
Collecting Department	139,043 60	
Auditing Department	800 00	
Refunded water rates	228 01	
Refunded water collections	1,189 75	
Refunded water tax titles	35 43	
Metropolitan assessment	1,615,872 84	
		<u>\$3,170,336 58</u>
Transfer of surplus to city loans, redemption of	1,342,038 55	
		<u>4,512,375 13</u>
		\$2,652,974 65
Expenditures from debt account:		
Boston water debt	\$38,000 00	
Interest on loans	9,666 25	
		<u>47,666 25</u>
		\$2,605,308 40
Cash forwarded to 1947		46,341 51
Surplus on hand, December 31, 1946		2,558,966 89
		<u>\$2,605,308 40</u>
Loan account:		
Balance outstanding, January 1,		
1946	\$338,000 00	
Paid during 1946, Boston water		
debt	38,000 00	
		<u>Balance outstanding December 31, 1946</u>
		<u>\$300,000 00</u>
Construction account:		
Extensions of mains (from revenue)		\$10,944 68
Cost of construction, December 31,		
1946	\$24,542,552 74	
Cost of construction, December 31,		
1945	24,531,608 06	
		<u>Increase in plant cost during year 1946</u>
		<u>\$10,944 68</u>
Cost of existing works, December 31, 1946:		
Pipe yards and buildings*	\$84,332 16	
Engineering expense	57,873 58	
Distribution system†	24,222,478 36	
Hyde Park water works	175,000 00	
		<u>\$24,539,684 10</u>
High pressure fire system‡		2,293,316 75
		<u>Total cost</u>
		<u>\$26,833,000 85</u>

* \$10,500 deducted on account of abolishment of Charlestown yard.

† Includes \$155,023.89 expended on high pressure fire system in 1925, 1926, 1931, 1932, 1933.

‡ \$33,850.96 deducted from cost of high pressure fire system on account of abandonment of pumping station, Battery street.

Shutting Off and Turning On Water in 1946.

Number of shut-offs for repairs	5,609
Number of premises turned on after repairs	5,211
Number of shut-offs for vacancy	448
Number of premises turned on for occupancy	430
Number of premises shut off for nonpayment of water rates	195
Number of premises turned on again after being shut off for nonpayment	91
Number of premises shut off on account of waste	5
Number of premises turned on again after being shut off for waste	0
Number of new service pipes turned on for the first time	108
<hr/>	
Total number of times water was shut off or turned on	<u>12,097</u>

Table No. 11. High Pressure Fire Service.

*Showing Lengths of Water Pipes, Connections, Hydrants and Valves in Same,
December 31, 1946.*

	20-Inch.	16-Inch.	12-Inch.	8-Inch.	6-Inch.	Total.
Length owned and operated, December 31, 1945.....	20,140	46,953	31,756	.....	.....	98,849
Gates in same.....	.....	201	144	502	.....	847
Blow-offs in same.....	.....	.....	.....	.....	6	6
Length owned and operated, December 31, 1946.....	20,140	46,953	31,756	.....	.....	98,849
Gate valves in same.....	.....	201	144	502	.....	847
Blow-offs in same.....	.....	.....	.....	.....	6	6
High pressure fire hydrants....	.....	.....	.....	.....	.....	505

18.72 miles of mains in system.

WATERWORKS STATISTICS, CITY OF BOSTON.
FOR THE FISCAL YEAR ENDING DECEMBER 31, 1946.

Mains.

Kind of pipe: cast iron, wrought iron, steel.
Size, 2-inch to 48-inch.
Extended, miles, 1.187.
Size enlarged, miles, none.
Total miles now in use, 1,001.280.
Public hydrants added, 18.
Public hydrants now in use, 12,254.
Stop gates added, 29.
Stop gates now in use, 16,027.
Stop gates smaller than 4-inch, 37.
Number of blow-offs, 861.
Range of pressure on mains, 30 to 90 pounds.

Services.

Kind of pipe and size: Lead and lead-lined, $\frac{1}{2}$ -inch; cast iron, 2-inch to 16-inch; wrought iron and cement lined, $\frac{3}{4}$ -inch to 2-inch; brass and copper, $\frac{5}{8}$ -inch to 2 $\frac{1}{2}$ -inch; service taps added; total service taps now in use as per metered services.

Cost of Replacement of Main Pipe, 1946.

Street.	Location.	District.	Size. (Inches.)	Feet.	Materials.	Labor.	Inspection.	Total Cost.	Original Size. (Inches.)	Feet.	Remarks.
Dorchester avenue.....	Between B and Sixth streets.	South Boston.	16	205	\$883 31	\$958 40	\$103 12	\$1,895 33	16	205	
Callender street.....	Between Don and Tucker streets.	Dorchester.	12	1,997	11,214 54	2,091 73	543 16	13,852 43	6	1,997	
Boyd street.....	At Callender street.....	Dorchester.	8	31	.....	.....	.....	.....	6	31	
Michigan avenue.....	Between Columbia road and Erie street.	Dorchester.	8	820	1,495 99	.....	.....	1,495 99	6	820	
Columbia road.....	At Michigan avenue.....	Dorchester.									
Don street.....	From Callender street.....	Dorchester.	12	50	.....	.....	.....	.....	6	50	
Carlos street.....	From Callender street.....	Dorchester.	8	34	.....	.....	.....	.....	6	34	
Floyd street.....	From Callender street.....	Dorchester.	12	4	.....	.....	.....	.....	12	4	
Tucker street.....	From Callender street.....	Dorchester.	8	33	.....	.....	.....	.....	6	33	
Lyford street.....	From Callender street.....	Dorchester.	8	4	140 01	.....	.....	140 01	8	4	
Lauriat street.....	From Callender street.....	Dorchester.	8	31	.....	.....	.....	.....	6	31	

Oakview terrace.....	Between Centre street and Dead End.....	West Roxbury.	12	379	1,867 92				1,867 92	6	886
Oakview terrace.....	Between Centre street and Dead End.....	West Roxbury.	8	507							
Belmore terrace.....	Between Boylston street and Oakview terrace.	West Roxbury.	8	284	288 05				288 05	6	284
Stanton street.....	Between Norfolk and Evans streets.	Dorchester.	8	1,150	2,106 71				2,106 71	6	1,150
Warren Avenue Bridge...	.....	City.	16	225						16	225
School street.....	Between Washington and Harvard streets.	Dorchester.	8	1,130	44 87				44 87	6	1,130
Rosedale street.....	Between Washington and Whitfield streets.	Dorchester.	8	780	63 08				63 08	6	780
Fairmount court.....	.....	Hyde Park.	8	380						4-6	380
					\$18,054 48	\$3,053 13	\$646 28	\$21,753 89			
			8	5,184						6	7,606
			12	2,430						8	4
			16	430						12	4
										16	430
	Totals.....			8,044							8,044

Cost of Extension of Main Pipe, 1946.

STREET.	Location.	District.	Size (Inches.)	Feet.	Materials.	Labor	Inspection.	Total Cost.	Remarks.
Rosewood street.....	Between Birchcroft road and Dead End	Hyde Park.	8	238	\$672 59	\$327 41	\$59 60	\$1,059 60	
DeStefano road.....	Between Hyde Park avenue and Dead End.	Hyde Park.	8	188	432 82	364 27	47 82	844 91	
Neallian Crescent.....	From Pond street.....	West Roxbury.	8	520	2,092 45	637 52	89 72	2,819 69	
Alder street.....	Between Washington street and Roslindale avenue.	West Roxbury.	8	293	829 09	401 11	58 60	1,288 80	
Hautevale street.....	Between Clarendon and Poplar streets.	West Roxbury.	8	156	430 42	287 66	51 12	769 20	
Birchcroft road.....	Between Pinewood street and Dead End.	Hyde Park.	8	110	743 41	250 01	49 86	1,043 28	
Fairmount court and Walnut street.	Under New York, New Haven and Hartford Railroad.	Hyde Park.	8	134	1,722 47	802 22	116 53	2,641 22	
Zeller street.....	Between Selwyn and Centre streets.	West Roxbury.	8	148	231 18				

Beacon street	Between Berkeley and Clarendon streets.	City	8	91	281 82	187 40	26 40	495 62
Frazer street	From March street	Dorchester.	8	280	1,102 96			
Laurel road	Between Birchcroft road and Trelawney street.	Hyde Park.	8	35				
Emery road	Between Denton and Hollis roads.	Brighton.	8	137	796 18			
Hollis road	Between Emery road and Cambridge street.	Brighton.	8	110				
Franklin Field	From Stratton street	Dorchester.	8	2,400				
Franklin Field	From Stratton Street	Dorchester.	3	1,000				
Alsen Playground	Between Christopher street and Victory road.	Dorchester.	8	1,400	557 85			
Beacon street	At Massachusetts avenue	City.	8	60	310 76			
Cefalo road	West Roxbury.	8	35				
			3	1,000	\$10,204 00	\$3,257 60	\$499 65	\$14,012 56
			8	6,335				
	Total	7,335				



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